

AUGUST, 1875.



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TO FARMERS AND GARDENERS.

\$1,000 REWARD TO ANY ONE that can find by analysis or otherwise any adulteration whatever in our manufacture of Bone.

No heavy Bones taken out for Bone Black, or other purposes.

The First Manufacturer in America that sold **GROUND BONES** by **WEIGHT**.

PURE BONE DUST AND

BONE MEAL

from Slaughter-house Bones, twenty-five years the standard for purity and excellence.

CHEMICAL LABORATORY OF P. B. WILSON, No. 32 Second Street, BALTIMORE, July 30, 1873.

Joshua Horner, Jr.—Dear Sir: The following is the result of analysis of a sample of your Bone Dust drawn by myself from a lot of seven tons lying in your warehouse:

Moisture, (deter. at 212° F.).....	3.74 per cent.
Organic Matter.....	40.12 per cent.
Containing—Nitrogen, 4.08; Ammonia 4.96.....	
Inorganic Matter.....	56.14 per cent.
Containing Phosphoric Acid.....	24.52 per cent.
Containing Bone Phosphate of Lime.....	58.52 per cent.
Insoluble Matter.....	2.51 per cent.

This is the **BEST SAMPLE OF BONE DUST I CAN FIND IN THE MARKET**, and call your especial attention to the **LARGE PERCENTAGES OF VALUABLE MATERIAL** for the improvement of the soil, and to the **SMALL PERCENTAGES** of moisture and insoluble matter.

Respectfully, etc.,

P. B. WILSON, *Analytical and Consulting Chemist.*

PREPARED FOR DRILLING, AND PACKED IN BAGS, 107 LBS. EACH, AT \$45 PER TON. DISSOLVED OR VITRIOLIZED BONE, \$48 PER TON. BONE ASH, GROUND AND DISSOLVED, \$42 AND \$48 PER TON. FARMERS' SUPPLIES.

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All Kinds of Fertilizers, &c.

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Portable Steam Engines and Boilers,

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Likewise

FRUIT AND ORNAMENTAL TREES, SHRUBS AND PLANTS; FIELD, GARDEN AND FLOWER SEEDS.

ALL KINDS OF FARM SUPPLIES.

We also offer to select and have shipped

IMPROVED LIVE STOCK,

CATTLE, HORSES, SHEEP, SWINE and POULTRY. In this Department we buy only from breeders of established reputation of the several kinds, and cannot undertake to procure ordinary farm stock, such as draft horses, milch cows, &c. In this vicinity great attention is paid to some particular breeds of stock, and specimens can be had here which are nowhere to be surpassed.

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Sam'l Sands & Son,

EDITORS AND PUBLISHERS AMERICAN FARMER,

No. 9 North St., Baltimore, Md.



THE AMERICAN FARMER.

"O FORTUNATOS NIMIUM SUA SI BONA NORINT
"AGRICOLAS." Virg.

PUBLISHED BY SAM'L. SANDS & SON, BALTIMORE, MD.

VOL. IV.—No. 8.]

AUGUST, 1875.

[NEW SERIES.

A Beautiful Country Seat.

Few strangers visiting Baltimore and driving out Charles Street Avenue, which is one of the most popular drives, and few indeed of our own citizens whom business or pleasure has taken in that direction, but have noticed and admired, about five miles from the city, an Osage Orange hedge of most shapely form surrounding a lawn handsomely planted and covered by a turf of such delightful verdure that it would seem to laugh to scorn the doubters who say that under our tropical Summer suns the rich green sod of England is unattainable. This attractive place is the summer residence of Mr. WM. H. PEROT, a gentleman noted in our community for his great enthusiasm and fine taste in horticultural art. A recent visit enables us to give some sketch of a few features which contribute to the effect of what is probably the best-kept place in this vicinity.

The house, placed some distance from the entrance, is gained by an approach not meaninglessly tortuous, but of an easy and graceful curve. The road-making is simply perfection in that infrequent art, and, while wishing to keep inside the limit of unmerited enthusiasm, we must give to the turf, for emerald richness and velvet-like softness, the palm over any other we have ever seen in this country. The solidity and smoothness of the roads were attained only at the expense of thoroughness,—the whole soil being removed to the depth of two feet, filled in with stone, the gravel then laid on and rolled. The charming turf was secured by thorough plowing, subsoiling and smoothing, heavy seeding, persistent hand weeding and constant mowing and rolling. To maintain it in condition, the only fertilizers used are ashes, plaster and bone-dust. In the hottest seasons the grass does not lose its vivid freshness.

Twenty years ago the site of this lawn was covered with brush and scraggy trees—a wilderness. In clearing up, the rare good judgment was displayed of preserving some of the indigenous growths, and now some well-grown Dogwoods and Cedars find themselves entirely in place amidst many of the rarest ornamental trees. The plantings have been done, we should judge, slowly and carefully,—provision being made not only for present appearance, but for future effect; each tree has an individuality about it, many of them a history. On this side may be seen a Norway Maple, so fully furnished to the ground as to be almost globular in shape, on the other a *Magnolia macrophylla* of unusual growth and perfect symmetry; here the somewhat rare *Salisburia*, or Maiden Hair tree, with its peculiar fan-shaped leaves; there a well-grown Kentucky coffee tree, flanked by a native Chestnut, bearing fruit of unusual size and rare sweetness; farther on another group, in which what was perhaps a native sapling stands by the side of a rare tree from some foreign nursery.

Blended with the deciduous trees, forming effective groups with them, each setting off to advantage the beauties of the other class, are finely developed evergreens, both native and exotic. A favorite seems to be the *White Spruce*, whose glaucous leaves are beautiful in the sunlight. A well-grown *Balsam Fir* was noted as about in its prime, well furnished to the ground and with none of the scragginess which this tree unfortunately acquires as it grows older. An occasional *Juniper* finds suitable place, but not in formal rows, as too often seen.

More apart to themselves, as inviting closer inspection, are many of the rarer evergreens and deciduous trees. Among the former are to be mentioned flourishing specimens of Nordmann's *Silver Fir*, thought by many to be the finest

evergreen in cultivation; *Picea Nobilis*, a truly majestic tree of gigantic stature when of age; *Picea pinsapo*, whose silvery foliage makes it one of the most beautiful of its class; the *Deodar*, most graceful of Cedars; the newer *Retinosporas*, destined to become general favorites from their beauty and hardiness; the *Hollies*, in variety; and, as an experiment, we presume, some *Araucarias*, which are generally considered too tender to withstand our winters. Of deciduous trees we noted as rare, a very beautiful tree, the Ash-leaved variegated Maple, and another, the Laurel-leaved Oak. In a pot, among some new acquisitions, was a Golden-leaved Chestnut; and we ought to mention a very beautiful weeping variety of the Japan Cypress. The rare things, however, are so numerous that to particularize would be to occupy all our available space with a catalogue-like list.

A point to which we wish to call attention as of practical moment—an object we are always glad to achieve at the same time as giving interesting descriptions—is that in all of the plantings made by Mr. Perot he has chosen from the nurseries *small trees*. The reverse is so often adopted by planters anxious for early effect, that an instance of good results soon ensuing from very small trees is worthy of being noticed as deserving imitation.

The grounds in front of the house are gently undulating, but on the rear they become suddenly broken and almost precipitous. A stream winds through the entire property, and has not only been utilized in driving a wheel to fill the capacious reservoirs, from a perennial spring, but occasionally widened out so as to afford pleasing glimpses of water from several rustic arbors and summer-houses picturesquely built and approached by winding walks. The character of the land is such, indeed, that sudden changes meet the view at every turn, and art, well concealed, has made the most of a natural site which must at best have been unpromising.

Along the brook many native ferns have been planted, and in the congenial shade flourish and multiply. Advantage is also taken of some favoring sites to form several large plantations of hardy *Rhododendrons* and *Azaleas*—a class of plants too much neglected in this section. Of these we presume there are here planted out not less than five or six hundred, which at the time of blooming must present a gorgeous sight.

Around the dwelling and by the sides of the walks and drives are many groups of hardy shrubs and beds of tender plants. All of these,

by a simple but convenient arrangement of underground cisterns and pipes, can be watered with very little labor.

The same system of water supply extends to the stables and cow-houses, (in the latter of which are some of the choicest of Jerseys,) the green-houses, grapery, gardener's house, &c. By a plan of grass alleys and paved gutters the steep hill-sides are prevented from washing by rains and a sod preserved on declivities such as are often found bare.

The greenhouses, two in number, neat and nicely-finished structures, are sheltered under the protection of a hill. In them, under the care of Mr. Reinicke, the gardener, is to be seen a varied collection of fine plants. Much of the material is, of course, at this season turned out of doors, but a great many handsome things still find quarters in the houses and look clean and thriving. We noticed a large number of Orchids lately arrived, rather crowded into close quarters, awaiting the completion of a new house which is being built to grow them and a large collection of ferns, which are favorites with Mr. Perot. The grapery, a building of some size and architectural pretensions, is near the other houses, and contains exotic vines and a few nectarines. The vegetable and fruit gardens and pear orchards are near by, with the gardener's house convenient to all.

There are here, however, so many horticultural specialties that our memory, without aid from notes, brings up so many new ones that we must, for want of space, leave the subject. It is sufficient to say that there are enough objects of rare interest to occupy a lover of such things for many hours. We do not know that we can more appropriately close this article than by recommending any of our readers who may be convenient to them to see these handsome grounds, whose owner, public-spirited and imbued with the liberality common to all votaries of Horticulture, will, we are sure, give every facility for inspection by those who are fond of good examples of landscape gardening, fine trees and beautiful flowers.

On "The Eastern Shore."

We spent a day last month in company with Prof. P. R. Uhler and Mr. Brackenridge at Riverside, the well-known farm of Col. Edward Wilkins. Mr. B. is well-known to all the readers of the *American Farmer*. Prof. Uhler is the President of the Maryland Academy of Sciences, and occupies a high position among scientific men as a natural historian. From his

eminence as an authority on insects, Col. Wilkins was desirous that he should have an opportunity of seeing, on the ground where it is playing such havoc, the *Aphis* which infests the peach crop and threatens to materially lessen if not entirely destroy the product of that fruit in the section which seems, by nature, specially adapted to its growth. An examination showed that these minute insects were numerous as well on the leaves as on the roots, and Prof. Uhler was fully satisfied, we believe, that they are identical, and that they are the *Aphis chrysanthemi* and not the *A. persicae*, as often assumed. Col. Wilkins says they are this year far less numerous and destructive than last season, and this fact confirms his belief in the periodicity of their appearance on the leaves.

In an orchard of 15,000 trees, originally planted with Rivers' Early Beatrice, the destruction by this pest has been so great, that there have been successive replantings to the number of 20,000 trees, so that of the original trees probably not 300 remain. A number were dug up, and it was found that last year's roots had in almost every case been denuded by the aphids of their fibrous feeders, but that in many instances the trees had asserted themselves and put forth fresh rootlets, which enabled them to maintain a bare existence.

Col. Wilkins thinks he has discovered a remedy for this destroyer, and as soon as the crop is harvested he will begin its application. Experiments have so fully convinced him of its effectiveness that he believes it will be found an insecticide of general usefulness, and under this belief he has communicated it to the French Government as a probable cure for the Phylloxera. It would be an achievement indeed, to attain success in that direction, and we would record with great pleasure the fact that an Eastern Shore peach-grower had proved the savior of the vine crops of France, and secured the grand prize of the State, (fr. 60,000,) and the innumerable lesser ones offered by horticultural and other bodies.

Through all the peninsula the peach crop is abundant. Our party rode through some of the orchards of our host and were astonished at their extent, beauty and productiveness.

We also visited the fruit farm of Mr. Robt. S. Emory, an account of whose orchards and small fruit plantations, as well as some contributions on fruit culture from whose pen, have heretofore appeared in the *Farmer*. This gentleman is extending his operations, and all kinds of small fruits are largely grown by him. Pears are,

however, his largest crop,—his orchards now numbering about 9,000 trees, with a great number coming on in the nursery. He does less with peaches, but his trees were all evenly and fully loaded with fine fruit. To any pear-grower Mr. Emory's orchard is worth a long journey to see, and Mr. Brackenridge, who is on that point not a lenient critic, found, we believe, nothing to find fault with. They were all dwarfs, of, we believe we may say, unmatched symmetry and beauty, and consist almost entirely of Bartlett, Duchesse d'Angouleme and Sheldon.

We dropped in for a few minutes to see our friend Mr. W. F. Massey, at Chestertown, but, just after a rain of great violence, things were a good deal beaten down, though many effective and attractive plants bedded out drew our notice, while in the houses was to be noticed the usual display such as florists show during the interregnum of midsummer dullness.

Notes from the Eastern Shore.

Messrs. Editors American Farmer :

Small Fruits.

For a profitable market strawberry, the Wilson yet stands unrivalled here—the "Monarch of the West" has the merit of producing larger fruit, combated by the demerit of "not enough of it" to insure as large receipts at even advanced prices. Col. Cheeny, though immensely productive, and of about same size as Wilson, does not measure up to it in shipping qualities; Early Hudson—to sum up a description briefly—is a fraud, and many other varieties recently introduced can be justly placed in the same catalogue.

In raspberries, the Brandywine for a red berry has this season very nearly met the claims of its disseminators, while the Ontario, that was introduced a few years ago, upon the representation that it was a fine-sized blackberry, a week earlier than the Doolittle, proves itself shamefully recreant to everything valuable.

Early Apples, Plums and Peaches.

Tetofsky apple in shipping condition not more than two or three days in advance of Early Harvest, while the "Fourth of July," (judging only from one season's trial) should be prefixed with "twenty," in order to embody a semblance of truth in its pretentious name; Early Ripe—with the writer—is as early as any of them, and annually produces double the quantity of smooth, perfect fruit that Early Harvest does.

The Wild-Goose Plum is ripening, and indicates that its season will be spread over at least fifteen days—the trees are rapid in growth, very prolific, and the fruit, while its quality will commend it to all lovers of "good things," is too big a task for the most enterprising curculios to handle. The industrious "Turk" made a spirited and determined attack on the fruit as soon as it was large enough, but after a protracted siege, abandoned its object in *flighty* hopelessness.

The three early varieties of peaches sent out by Mr. Rivers, of England, will not be fruited to

any extent in this section the present season, but the young trees of "Louise" and "Rivers" do not seem any in advance of Hale's at present.

The Crops, &c.

Many of our farmers have threshed their wheat, and so far the yield is better than usual. Corn, with a large per cent. of the farmers here, was badly eaten by the cut-worms, (worse than ever before known by the "oldest inhabitant") but where a stand was secured it is looking very well, though rain would be quite beneficial to the crop now, as the ground is getting too dry for rapid growth.

Will you please give name of the pea commonly used in Virginia, as a green crop for turning under, together with usual price per bushel and place to procure them? Inquiringly yours,
July 15th, 1875. EASTERN SHOREMAN.

The Culture of Celery.

Messrs. Editors American Farmer :

Assuming that the plants are grown and ready for transplanting, August 1st or a little earlier is the time I prefer to set them. If the plants have been cut back and properly treated in the seed-bed, there will be but little difficulty in getting them to live. I prefer a piece of level ground as rich as possible and more inclined to clay than sand. Set upon the surface in rows 5 feet apart and 4 to 6 inches in the row. As soon as the plants get heavy enough for the outer leaves to fill on the ground, they should be gone over and straightened up by hand, at the same time drawing earth enough to them to keep them straight. About the latter part of September begin to earth up. Commence in the middle of the open space between the rows, and leaving a space 18 inches wide each side of the row, build up the bank of earth as nearly perpendicular as possible. Two men should bank at once and on opposite sides of a row. This will place each row of celery in the middle of a bank of earth a yard wide. The top of the bank should be kept level as much as the earth will lie. At each earthing leave 6 inches of top above the ground until last of November or 1st December; earth it entirely over and cover the ridges with corn stalks or straw. I have tried all the various methods of storing celery, but find that for this latitude it is vastly better left where it grows, if it has a sufficient protection to prevent hard freezing.

Celery covered in this way ought to keep good all Winter. W. F. MASSEY.
Chestertown, Md., July, 1875.

Marketing the Peach Crop.

In our last we alluded to the fine crop of this fruit in Maryland and Delaware, and to the steps taken by growers to ship their products to more remote points than usual. The Winter was so severe in the West that the crop was largely killed, and this will open a wide market for our peninsula growers. The *Sun* of this city gave the following on this point in its issue of the 19th ult :

The prospect of a crop of eight or ten millions of baskets of peaches from the Delaware and Maryland peninsula has stimulated the peach growers to find markets for this vast product. It has been settled that a fruit train will be dispatched over the Baltimore and Ohio railroad to the cities of the West as far as Cincinnati, Indianapolis and Chicago. Contracts have been made for 1,150 cars for the shipment of the fruit to New York city and Eastern cities, and there is besides a likelihood that the American Steamship Company of Philadelphia will fit up their vessels with refrigerators for a new peach trade with Liverpool. It is thought that 25,000 to 30,000 baskets of peaches may be transported each trip on these vessels, and that the venture will pay. Middletown, Delaware, will be the great collecting and distributing point, where an immense cooling establishment has been erected to secure favorable and uniform temperature for tempering storage of fruit awaiting transportation. All the Chesapeake bay landings will also be collecting points for the Eastern Shore of Maryland for the bay and river steamers to Baltimore, by which hundreds of thousands of crates and baskets of fruit will come to this market for packing or distribution. The energy of the peach growers in finding markets for their perishable crop, utilizing all the modern modes of quick transportation to distant points, will be of immense benefit to the section they represent, which is no doubt the greatest peach orchard of the world. The fruit is earlier and better than the Jersey fruit, and therefore has more money in it. Heretofore the shipments have always been large to New York and Baltimore for consumption and canning, but there have never been before in the history of the trade such indications of an immense and widespread enterprise and adequate remuneration as at present.

Cure of Peach Disease.

A New Jersey correspondent of the *Gardener's Monthly* writes that it would not perhaps be out of place to revise a recipe, an old one he believes in a few localities in Pennsylvania and New Jersey, and which might be more generally tested. He says:

"It is simply one part of saltpetre to two of salt, placed close to the body of a tree before a rain. It seems not only to destroy any fungoid growth or vermin which may be infesting the roots, but to act as an excellent fertilizer.

I received some large fruit trees a few years ago, sent by some friends a distance of 90 miles, and they were considerably mangled in the transit. Two of them were probably not less than four years old, a peach and a plum; the first got the yellows or the blues the succeeding season, and the second wouldn't perfect its fruit. I gave them a dose of the medicine, when they spunked up and rejuvenated, put on a new garment of emerald green, and promised amendment for the future. The succeeding year I got two bushels of peaches, and 10 lbs. of perfect fruit.

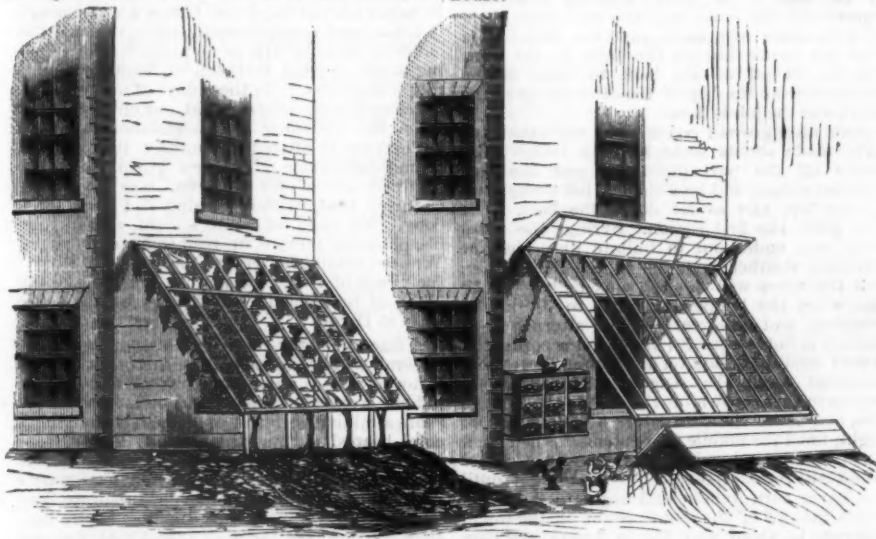
I might add that these old *successful* fruit-growers were in the habit of drawing the earth away from their trees in the Fall and sprinkling liberally with lime; they were left in this condition till Spring, when the earth was drawn back again and recipe as above applied."

Cheap Graperies and Henneries for the Million.

Mr. Wm. T. Harding, a well-known and effective writer on horticultural topics contributes the following to the *Gardener's Monthly*:

There is no valid reason why Frank Harvester, the farmer, Samuel Sawboard, the carpenter, or Thomas Tidyman, the tailor, (all first-rate fellows) with their wives and children, should not enjoy fresh laid eggs, and rich ripe grapes, as well as Governor Goodfellow, or President Placidman. One naturally supposes that "we the people" of the modern Canaan, overflowing with paper and pewter money, having equal rights, if not equal means, should at least have an equal share of the fruits of the earth, if

on the south side of his domicil, or any other suitable building, he may do so at a moderate expense. See pencil sketch, which will give a better idea in one minute of what I mean, than my pen will do in an hour. Both houses are one and the same, with this difference: the one on the left shows the Summer grapery, and the other, the Winter hennery. The ends are left open to show the inside arrangement; but they are to be glazed in, the same as the roof. The border in which the vines are planted is entirely outside; the reason is obvious. They are planted $3\frac{1}{2}$ feet apart, close up to the front, and the stems brought through holes in the boards, and fastened to wires fixed about sixteen inches from the underside of the sashes, from front to back. After the crop is gathered, the wood ripe, and the foliage falling, they may be pruned, painted, and put by for the Winter in this manner: Unscrew the front boards, and carefully drawing the vines outside, lay them along the front,—wrap them in mats or straw—and cover them with boards as seen in sketch. *Presto*, and the grape-house becomes a hen-house.



we can only get at them. Without prolixity I mean to show how it is to be done, and tell my honest and worthy neighbors in mediocre circumstances, how to combine pleasure with profit from Black Hamburg grape vines in the Summer and Autumn, and Black Spanish fowls in the Winter and Spring. Neither the history of the vine, nor the pedigree of poultry concerns us; nor whether the learned naturalist calls one *Vitis*, and the other *Gallina*, I care not. No matter whether Adam or Eve, Noah, Nehemiah, or Nicodemus ate grapes or eggs; ever so long ago if we good citizens, in this year of grace, can only get them now. With the aid of pen and pencil I trust I shall be able to make myself understood when describing the *modus operandi*.

Presuming the reader has a local habitation and desires to build a cheap lean-to grapery

Clear out all the leaves and litter, and white-wash with quick-lime and sulphur; thoroughly brush it into all parts inside except the glass, put in some temporary perches, and a number of boxes in compartments for nests, and the house will be amply furnished for the Spanish tenants. As most dwelling-houses are constructed over a cellar, it would not add much to build a furnace in, and from it run a smoke flue through the hennery, to warm, aid, and comfort the happy family of feathered *Senors*, *Senoras* and *Senoritas*. With the warm bright sun shining through the glass in clear weather, and with fire heat when dull and cold, they will diligently carry on the egg business, as if they had a contract, all through the Winter and Spring, and thus pay for their board and lodging.

The ventilators are a simple contrivance,

hinged at the top, two feet wide, and open in sections; (see cut.) At each end, over the door a ventilator may be made to open on pivots, so as to admit more air during the hot Summer days. As with the front, the ends may be made up with grooved boards two feet high, above which must be glass. Good sound posts, well set, three feet deep and five feet apart, will serve to support the roof, and fasten the boards to. The roof is fixed or stationary, and if the sash bars are strong enough, say 2½ inches wide, and 4 inches deep, it will not require heavy rafters. Glaze with 8x10 inches or 10x12 glass, and paint all the wood work.

As the structure is a cheap one, so may be the border. To save the expense of excavating and draining, elevate the bed in which the vines are to grow, so as to keep the roots above the wet and bad soil below, and slope it to the South. Any good loamy soil with a fair portion of rotten manure, some bones and lime rubbish will do. When ready for planting procure from the nursery as many two-year old Black Hamburg vines as are required, and plant them about the middle of March, or as soon as the soil is in good working condition. Spread out the roots regularly and cover them up with some nice earth, (not too deep,) then lead the stems through the holes in the front boards, cut off all the buds to three of the strongest from the top of the cane, tie up to the wires and the job is done.

Soon after growth commences, when the buds have made shoots some 10 or 12 inches long, prune off the part disbudded and the two weakest shoots, and lead the one left straight up to the top, and as far down the back as it will grow the first season. Syringe the vines daily, and endeavour to imitate nice pleasant growing weather as much as possible within, and the vines will flourish amazingly. Ventilate when the temperature rises to 70° in the morning, and close early in the afternoon. If the day is hot, air freely; if not, act accordingly. Avoid cold draughts on the young leaves and succulent wood. In August, when the wood begins to turn brown or ripens, use the syringe less, and leave the ventilators a little open all night, until the middle of September, then open them wider, and use less water. In October admit all the air possible day and night until the leaves turn yellow, and begin to fall; then about the end of the month prune off the top of the cane to about four feet in length, and they will then be ready to put to rest, as advised, for the Winter. Before putting by, paint them well all over with a mixture made as follows: Nux vomica, in powder, 1 oz.; whale oil soap, 4 oz.; tobacco, 8 oz.; sulphur, 4 lbs.; stir well up in 2 gallons of boiling water, with as much quicklime added as will make it as thick as city cream, and if thus laid on, it will be too nasty for either insects, rats, mice or other vermin to eat when the hard time comes in Winter. The size of house will be ample, if from 30 to 40 feet long, 14 to 16 feet wide, 2 feet high front, and 12 to 14 feet at back.

[The writer says the future management of the vines will differ from the first year's treatment, and intimates he will give it later. We will be on the look-out to borrow this also from our excellent cotemporary, who kindly furnished us the cut used above.—Ed. A. F.]

Make Home Beautiful for the Sake of Others—No. 2.

BY JANE BOSWELL MOORE BRISTOL.

How easy it is to give exquisite happiness to a child! Thousands spent in after years will not afford so much real pleasure and perfect happiness as the present outlay of a few dollars. Nor will thousands expended afterwards have the same power to improve, refine and elevate our children.

We cannot always go with them, nor shield them from the cares, disappointments and sorrows which *must* form part of their portion. It is one of the provisions of a wise Providence that our earliest impressions are the most enduring; children are then controlled by parental influence, and we may stamp at will, on the blank tablet of the mind, pictures which no future waves can wholly efface. Long, long after your child has gone out to battle with life, a mother's cherished flowers, tasteful home pictures, the aquarium or globe with graceful gold fish, and the hanging shelves of good books, will be remembered with yearning tenderness. It makes one sad to go into homes where, though rich food and costly clothing are not denied the children, there is little or no provision for growing minds, beyond their school books or doubtful publications. In these days of many books, we cannot be too careful what our children read. Even the authentic recommendations of high authorities is often no guaranty that a book is unobjectionable. The new poem called the "Life of Jesus" for children, was so highly endorsed that, without seeing it, I sent for a copy. No child of mine should see its one blasphemous picture, or read some of its pages. We need nothing better than the "Old, old, Story," the "Peep of Day," "Scripture Tracks" and the "Star of Bethlehem," and "Songs for the Little Ones at Home."

A fine shell, gay-colored sea weed, or a piece of coral, will waken a child's interest in natural history, and a microscope reveal a world of hidden wonders. I have had on a bracket for years a miniature forest of delicately branching coral, heaped under a glass shade of Baker Bros., on a ground work of tiny shells and sand. It was brought from the mid Pacific by a missionary's son, and is as lovely and far more delicate than flowers. The branches are small and spire-like, so frail indeed are the pink pieces that you can hardly touch them lest they crumble, though they have lain in the sea where these beautiful colors, deep red, rich pink, orange, and Tyrian purple, have been hidden from human eye.

Several pieces of walnut, shaped at Short's turning factory, (for it is often hard to have it done by hand,) may be thus covered by glass, and kept from dust and harm, gaily colored varnished Autumn leaves, heaps of shells, skeleton leaves and flowers, dried moss and rice shells, with many ingenious and beautiful ornaments. Even one on a table gives an air of taste and refinement to a room, and draws you to its occupant. I remember my surprise and pleasure, when snow covered the ground without, to find on a friend's marble table a large china dish in which bright green moss was

growing in water. The shutters were almost closed, and the one gleam of sunshine that came through the small opening fell across the moss, making it seem, as it really was, the freshest, brightest and most attractive of all her beautiful things. Yet how easily one may have such an ornament. Who can look at these coral groves without thinking if our Heavenly Father has so adorned the depths and caves of the sea, where no eye can rejoice in their loveliness, how great will be the beauty of that home where the good, the lovely and the loving of all ages will be gathered in His presence forever!

Making Wine.

The following is said to be a reliable mode of making wine from native grapes:

1. Select perfectly ripe bunches, and then carefully pick off the stems and remove all grapes which are not quite ripe.

2. Squeeze the juice out, either by hand or press; strain through a hair sieve, and pour it at once into a clean, sweet barrel or keg, adding to the vessel two gallons of water for every gallon of juice made.

3. At the same time put in four pounds of sifted sugar per gallon of juice.

4. In adding the two gallons of water stated in section 2, let it strain through the pulp, skins, &c., of the residuum of the grapes after being squeezed.

5. Fill the vessel full, up to the bung-hole, which cover with a sand-bag, to allow the fermentation to escape.

6. Watch the barrel daily, and clear or scrape away the scum, which will be thrown out in large quantities.

7. As the wine falls below the bung, fill up daily (after clearing away the scum) with sugar water, made with two pounds of sugar to the gallon of water.

8. The fermentation will continue from three to six weeks, according to the weather. When it has ceased, pour into the bung-hole about one gill of brandy to the gallon of juice, to flow over the surface and prevent its souring; but the brandy may not be indispensable. Then bung the vessel up tight.

9. During the cold weather in, say, the following February, when the wine is perfectly still and clear, draw it off into any other clean vessel, then quickly clean, scald, and rinse thoroughly the barrel in which the wine was made, and return the wine to it, bung it up, and draw it off as required for use.

10. If you wish to make a very palatable champagne, have the champagne bottles ready when you rack off the wine, as stated in section 9; put a table-spoonful of common syrup in each quart bottle; then fill with the wine, leaving about one and a half inches clear below the bottom of the cork, which fasten very securely with strong twine, as the pressure of the fixed air to escape is very great.

11. The wine will improve by age, after the operation described in section 9.

12. An old brandy or whiskey barrel is the best. (See section 2.) Never use a new barrel, as the wine will taste of the wood.

13. About fifteen pounds of grapes will give one gallon of juice. The riper the grapes the better the yield of the juice. One gallon of grapes in bunches weighs about four and a half pounds.

14. Keep the wine in cellar, where it will not be exposed to extremes of temperature.

15. An approximate estimate of the quantities required for a thirty-gallon barrel will be as follows:

To make thirty gallons of wine.—One hundred and fifty pounds grapes, yielding 10 gallons juice; 20 gallons water, strained through the pulp residuum, (see section 4;) 40 pounds of sifted sugar; 2½ pints of common brandy. (See section 8.)

If carefully made, the wine will be wholesome and palatable, with a flavor like grape-juice Madeira. It was preferred to all others at the Washington hospitals during the war of 1861-'5.

Floriculture, &c.—August, 1875.

By W. D. BRACKENRIDGE, Florist and Nurseryman,
Govanstown, Baltimore county, Md.

Green-House.

There is not much of importance in the routine of plant culture during the present month of which to remind our readers. About the most essential consideration is to guard against plants suffering for want of water, thereby killing the roots. Pots with plants that are plunged ought to be lifted, or given a sharp twist round, so as to prevent the roots from passing into the ground or material in which they are plunged.

Such plants as are loose in habit will require to be trained and tied up neatly to stakes; and seeds of such as be desirable to multiply, when ripe, should be gathered and dried in the shade, where there is free circulation of air. And as the great majority of plant growers abhor evil, pray then do not let it trouble you in the shape of insects on your plants, but with water from the syringe, sulphur from the duster, whale-oil soap and tobacco liquor, put on with a brush or sponge, with such appliances fight them persistently, and you will finally prevail in getting everything clean.

Young Camellias, that are growing freely, can now be shifted with safety into larger pots, after which operation keep them in the shade for a few days.

Lawn and Pleasure Grounds.

In accordance with our promise last month, we now submit a few remarks on certain kinds of trees and shrubs, suitable for hedge planting.

Hedges may be said to be planted for three purposes: first as barriers to prevent depredations on crops by cattle; second, as shelter screens for tender vegetation; and thirdly, as objects of ornament or division lines separating one department of a garden from another.

Those articles, from their robust and thorny nature, which present the greatest obstacle to the passage of cattle, are the Osage Orange, Honey Locust and Washington Thorn. The fruit of these is decidedly the most desirable for the farmer, as it

succeeds well in almost any soil that is not wet or shaded by trees, and will in four or five years form a line of resistance which few animals will dare to penetrate; we prefer forming our hedges of this, from a double row of plants, say eight inches between the rows with 8 or 9 plants to the yard, inserted in a zig-zag manner; this gives it more breadth below, and will in time defy small dogs and hogs from effecting a passage. Strong one-year old plants, cut down when planted to within four inches of the ground, are preferable to old ones. The hedge should be kept clean of weeds the first year, by at least two hoeings during the summer; the following spring after planting, the whole ought to be cut down to within 8 inches of the ground, and the second spring to within 15 inches, and even after, a summer trimming will be necessary in order to thicken and bring it into shape. The only objection to Osage hedges is, that the roots run out such a great distance, they thereby impoverish the land which ought to bring forth grain. The Honey Locust, from its open mode of growth, and pinnate foliage, never forms a compact slightly hedge. While the Washington and Cockspur Thorns form beautiful hedges, when the ground is rich and mellow, but it takes many years before they are strong enough to turn cattle. Of the two, we prefer the Cockspur.

To form screen hedges or boundaries to vegetable gardens, the English or our native Beech when planted 12 to 15 inches apart, stand shearing well, and form pleasing boundary lines during the summer, while the English variety retaining its brown leaves during the major part of winter, is therefore more desirable for shelter. Strongly allied to the two last, and equally as desirable in every respect, being more twiggy, are the European and American Hornbeams, and again we have the European one holding longer on to its leaves in late fall. The whole of the four last named, until such time as the hedge has attained to the acquired height, the training should be done in early spring; afterwards it should be gone over in summer, as well as in spring. For low division hedges, nothing is neater, and easier kept, than the evergreen Privet or Prim; this last name is certainly an appropriate one,—for, when newly cut, it has a precise or formal appearance, but is not at all calculated to resist the passage of small animals.

The most beautiful and withal of great resistance as a hedge is the scarlet-flowering Japan Quince. Nothing can surpass the brilliancy of its surface in the end of April or early May. We have a hedge of this kind on our place, leading to the entrance gate, which, when in bloom, forms a sort of shrine before which passers-by linger long in admiration. This hedge has been planted over 12 years, and is now about 7 feet high by 4 wide at base, and so close has it become by shearing that a bird can scarcely penetrate it, particularly on the south side. We trim it twice in the year—once in June and at the end of August. The distance in the row of the plants when set was about 15 inches. There is also a native shrub, which grows on the outskirts of woods, of a twiggy habit, a species of Viburnum, and known as "Black Haw." We have never seen this tried in hedges, but from its

branching habit, charming white flowers and black berries, we look upon it as just the very thing for this purpose, and as it grows very abundantly all through Maryland and Virginia, we hope some one will give it a trial, as we intend to do ourselves. A friend of ours suggested to us a short time ago, "that the English Field Maple would suit well for hedging." To this we agree, as its low branching character presents all the qualities necessary for such a purpose.

We now turn to contemplate other objects as suitable for hedges, whose standing character is what are known as Evergreens; and first among these to adopt as dividing screens or hedges, is the American Arbor-Vitæ; its hardness, rapid and compact growth, is all that the most fastidious admirer of decorative gardening could desire. The plants should be placed about eighteen inches apart, and with the exception of cutting back the straggling branches, allowed to remain at least two years after planting before the shears are put on it.

The Norway Spruce, if planted about two feet apart, forms a compact and sturdy hedge, and its treatment should simply be, to keep the row clean of weeds until such time as the leaders have got as high as five feet, when these should be cut back to about four, shortening in at the same time the lateral branches, after which the gaps or thin places in the line will soon fill up.

The Hemlock Spruce, by long and constant shearing, makes even more graceful division or boundary hedge than either of the two foregoing, but is more choice in locality, and appears to prefer a soil that is deep, cool and humid. About twenty inches is a good distance to plant these apart in the row; and to avoid clipping them until they have got well established.

For low neat division hedges the Siberian, Hovey's and Globose Arbor-Vitæ are very suitable; but as they afford no protection and little shelter, are seldom or ever brought into use, except as a finish to a parapet wall; and for which latter purpose the Pyracantha Thorn is admirably adapted, as such a site shows its red berries to advantage during the winter. Hedges formed of Hollies and Yews are the great attraction of the British gardens, but they are too tender to resist our severe winters here and north of us. We have seen Yew hedges ten feet high so smooth and compact of surface that a bird could with difficulty penetrate them. In conclusion we would say, from experience and observation, that the best form into which to trim a hedge, is that of a reversed letter v (Λ,) as this shape admits of light and air gaining admission to the very base; any other form, as that of a rounded or flat top, causes the lower branches to become weak, thin, and terminating in death; and beyond these reasons it renders the trimming more difficult and laborious.

The Clematis.

Of this beautiful and now very popular plant, a well-posted Rochester contributor of the *Gardener's Monthly* writes as follows:

First in order it must be understood that there are two very distinct classes of them, as far as their manner of flowering is concerned.

There are the Spring bloomers blooming in May and June, and the Summer bloomers flowering bountifully in July, and giving occasional flowers until late in the Summer. The Spring bloomers to be effectual must of necessity be hardy, root and branch, or no flowers; inasmuch as the flowers from this class are produced on short shoots thrown out the current Spring from long canes produced the previous Summer, after the manner of grape vines; and as a consequence where these long canes cannot be preserved through the Winter there will be no short flower spurs nor flowers the following Spring. There are, however, several varieties whose wood has stood zero and below, and the roots of all, with a slight mulching, will endure almost any cold and throw up again from the crown even where the wood of the previous year is killed; but under such circumstances, although the plant is not lost, the flowers for that season are gone.

But the other class or Summer bloomers, are in all their qualities much preferable to the Spring bloomers. This class, if the wood should not be hardy, is of comparatively small consequence, as the root is hardy and will throw up a long cane which flowers at its termination the same season in July; but of course where the wood is always killed back, although never without flowers, you cannot extend the surface covered with the plant; but there are several varieties (Jackmanii notably so) of which the wood can endure zero and 10° or 12° below, and with such a variety every live wood bud will give a long cane through the Summer, terminating in many blossoms. A plant four years planted on my house last July had 560 flowers open at one time, and if no mishap occurs and I am liberal to it I do not see why next year (1875) I might not have 1,000 flowers on the same plant.

The varieties which have given me most satisfaction are Jackmanii, a beautiful dark blue; viticella rubra grandiflora, almost a crimson, wood hardy. Lady Bovill, a light blue, (wood not hardy.) The above are of the Summer bloomers. Of the Spring bloomers, Standishii, blue, woody; Fortunii, double white, wood hardy. Each class requires liberal treatment, very so—they want daily watching through the growing season, as the growth is so rapid that a week's inattention would give a tangled mass impossible to undo without the destruction of much of the plant; although they have no tendrils, they twist the petioles or leaf stalks around any small object contiguous to them, and if left to themselves, not always doing so in the most symmetrical manner.

Potomac Fruit Growers—June Meeting.

Continuation of President Gillingham's Paper on The Pear.—The pear may be grafted on the thorn, mountain ash, apple, quince, or its own stock.

By grafting on other than its own stock, we dwarf the tree, which renders it, comparatively, short lived. Dwarfs should be pretty much confined to the amateur's garden, and kept under high cultivation. In this region an airy, high and cool clay soil, with a northern exposure, is the most desirable.

As a standard the tree requires little care or pruning after it is established in the soil. It should be planted as closely as possible—say 15 to 20 feet—that the trees may protect themselves from high winds, and keep their feet cool. A high airy situation is the great remedy against the *Pear Tree Blight*. This blight, however, consists of two distinct diseases—one an insect, and the other a frozen sap blight, or, I think more properly, the *heated sap* blight.

The cause of the first is a very minute insect—the *Scolytus Pyri*. This brown beetle deposits its eggs in July and August behind or below a bud.

The remedy [as also for the Quince: *Reporter*.] is to cut off the branches—say a foot below the discolored parts and burn them. The cause of the second disease is *stagnant hot air*, and the remedy as above observed is a high and airy position.

Discussion.—The Potomac region is the favorite home of the pear. Dr. Snodgrass saying that the botanical name of this tree *pyrus communis* was prophetic, and the pear would become the fruit of this region.

It was thought that the Dutchess does as well on its own stock as when dwarfed, a member quoting his own standard trees as evidence.

A member had lost his trees where he had protected them by rows of peach trees. Blight is apt to follow a heavy crop.

On the tables were some fine strawberries—Wilson and Monarch of the West; also a seedling of great promise. G. F. NEEDHAM.

Washington, July 24, 1875.

Correspondence.

Hints on Irrigation of Meadow Land.

Messrs. Editors American Farmer:

The system of irrigation consists of open drainage connected with the distribution of water of common streams, brooks and rivulets, carried over the surface of meadow land, in thin sheets, by which process the manurial parts of the water, held in suspension, are forced to settle, by friction, on the surface, and thus enrich the soil with such matter as the grass-plant especially wants for its development and greatest perfection. These parts are dissolved by nature in all running water, the clearest spring water not excepted, invisible to the eye, but found by chemical analysis, and consist of silica and different salts, as the principal constituents.

The practical application of irrigation may be illustrated by a mill race running along the hill-side of a somewhat inclined valley. The stream from which the water is carried off is stopped up by a dam or sluice, at the highest possible point, in order to carry the race over as large an area as possible and include such high ground as will often appear much below the level and beyond the reach of natural flow from the point where the water is to be taken from. To imagine the sometimes astonishing extent of ground under our control for this purpose, a horizontal line may be drawn from the point of the dam in a valley, to a point some distance

below on higher ground or even on table-land.

The race (or canal,) may now be considered the feeder of the land to be irrigated. Branches will be sent from it over all swells of the ground, or in divisions, ending in smaller ditches, for the equal distribution of the water over level borders (not through slits.) Through all the lower or depressed portions, and between the distributing ditches, open drains are made to carry off the water, which is never allowed to become stagnant.

For the irrigation of grounds too level to allow enough motion of the water over the surface of the ground, the treatment is more expensive, but nevertheless practicable and well paying. The level ground must be changed into declivities, but not in large inclined planes, only into small beds or ridges, similar to the agricultural mode of plowing wet ground into beds between which furrows will carry off the surplus of water. Over these ridges will run small ditches (furrows) on a level (or in portions of a level at least) which, when fed with water will run over both sides of the ridge and effect the best irrigation. This way of irrigating had its origin in Lombardy, (Upper Italy) where it has been brought to its greatest perfection and from whence it came first to Germany, where meadows of the ridge-shape, yield as much as 4½ to 5 tons of hay per acre, and in Italy at least double that quantity, (as they add to the irrigation all the stable-manure from their many cows.)

In the treatise on "Town Drainage and Sewage," by Dempsey, it is stated that the *sewage water* of Milan used for the irrigation of meadows, produces seven crops, four of which are mowed for stable-feeding, and three for hay. The sewage water of Edinburgh, (says the same writer,) applied for grass land produces such enormous results, that an acre of ground is let annually at from £30 to 40. He mentions also an essay on Irrigated Meadows, published in 1826 by G. Stephen, and gives more examples of equal and even greater results: for instance, that a single crop had produced as much as 12 tons per acre.

My own experience was made only on common, (clear) running water, and as stated above, the product is from 4½ to 5 tons per acre in Germany. But suppose there would be less labor and perfection applied in the construction of the system of irrigation, and an acre would produce only 3 tons in America, repeating this every year, without top-dressing or plowing up and losing crops by that operation, is it not obvious then that irrigation deserves all attention of the rational farmer? His timothy field yields him from 1 to 2 tons of hay and will soon require top-dressing to prevent the dying out of the grass, whilst irrigation gives him continuously a large and safe crop, independent of dry seasons.

An objection may be made as to the inconvenience of harvesting and hauling over such ridges and open drains, but considering the fact that during that time the water is entirely cut off from the meadow, and the ground in consequence thereof perfectly dry, also that the rise and fall of ridges, and the size of the small ditches, only measure by inches, and that in consideration of the immense growth of the grass, even a little inconvenience will be paid for

manyfold; such objections are never thought of where the blessing of irrigation is to be found.

The cost of preparing grounds for irrigation, depends on local circumstances and the degree of perfection required. The capital of investment is bound to come back in a couple of years in common cases, provided the improvement is made on right principles and with the proper knowledge, and if the irrigation itself be carried out rationally and not by overdosing at an improper season. It would sound strange to say that irrigation during the warm growing season should be *least* applied, and during fall and spring the *most*—and yet, this is a fact based on experience and science together. When vegetation has stopped, we should use all the water we can get, in order to enrich the soil; when the plant gets in sap and growing commences, we should give it plenty of air and only as much moisture as required for the assimilation of the nourishing particles contained in the soil. The best-arranged system of anything may be spoiled in its good results by misapplication, as we often happen to notice in agriculture.

A somewhat rough way of irrigation is the so-called "flooding of meadow land," which under certain local circumstances, can be very advantageous, but is generally considered less valuable than the irrigation described above, where the motion of the water in thin running sheets effects *friction*, whilst "flooding" retains the water on the surface of the ground in a *quiet position*, for periods of weeks, during which time many of the manuring particles of the water will settle on the ground, and other advantages will arise, as for instance, the disappearance of moss and other noxious plants, and the destruction of injurious animals.

It is a pity to see so little attention paid in this country to the subject of irrigation. Some may say there is land enough, and grass in abundance. But can it not also be said that the large areas require too much labor and means to be kept in productive order, and that it be much better to concentrate these factors on a much smaller area to a much greater effect, instead of scattering them over a large area. Will it pay to gather a ton of hay on 10 acres of ground, or 10 tons on 100 acres or on 50, or even 25? If 25 acres of meadow land could be subjected to irrigation by common running water, and the minimum product of 3 tons per acre be allowed, there would be 75 tons annual product of hay on the 25 acres, the only attention to be the regulation of the water by leading it on and off according to certain rules.

The expense of buying and hauling manure, plowing, harrowing, weeding, seeding, would be saved; dry seasons be harmless to the crop, no insects injurious, plenty of cattle could be raised, with manure enough to benefit poor or exhausted fields for other produce. In short, there is a source of wealth in the precious contents of running water that are carried away and lost in a thousand instances where the most trifling cost could secure them for the greatest benefit of the farm.

If the reader of these hints should feel a particular interest in the matter, I should be pleased to give him any information and advice in regard to the proceedings required for the intro-

duction of irrigation on his farm, gratuitously, by letter, or through the columns of the *American Farmer*.

AUG. FAUL,

General Superintendent Druid Hill Park.
Baltimore, July, '75.

Lime, Plaster, and Home Manures.

Lime, Plaster, Ashes, Clover and Cow-peas.—
The farmer's cheap but main resources these.

Messrs. Editors American Farmer:

Could our Virginia farmers appreciate as they should the benefits to their agriculture of a more liberal use of lime, plaster and domestic manures, we should have reason to hope soon for a revival of our waned prosperity. Whilst we go plodding on, as we have since the war, with little or no improvement of the soil—making but little beyond our necessities and wants—we must be content to endure our privations and poverty.

How many of us are even attempting improvements? It is true artificial fertilizers and stimulants are used where there is ability to purchase, but these, in the way they are used, are calculated to make bad worse; inasmuch as they are generally for the benefit of cereal crops without using the opportunity they afford for securing good stands of grass and clover; which supplies the foundation and beginning of permanent improvement.

We depend on fertilizers which we can hardly get, and neglect the cheaper and better supplies that are always within our reach. Lime is the great and efficient agent in good husbandry, and the losses in fertility of soils is attributable to its absence; for without it, in some form, our lands are comparatively of little value. With plaster or gypsum for our clover, what degree of fertility can we not attain? The wheat crop, one of our main resources, is almost sure on a good clover fallow, independent of all other aids to the soil; and improvement in this way is as easy and comprehensive as it is cheap and efficient. The same may be said of a good *pea fallow*, using from one and a half to two bushels to the acre, turned in in a green state; and results are obtained in less time even than when clover is used.

Our farmers should also be reminded, as they often are, of the waste and negligence in regard to manures of every description. In some instances banks of barn-yard and stable dung are exposed to all weather, and their valuable properties carried to other localities and lost. The sweepings of yards, contents of privies, and pig-pens, ashes, soap suds, kitchen and chamber slops are generally lost, or remain as a nuisance, producing bad odors, flies and diseases.

But as we propose to speak mainly of the benefits of lime, we proceed by urging the importance of its use as a general restorative for our wasted and neglected soils. We do not propose to speculate on the action and properties of this substance. Numerous intelligent writers and chemists have already done this. But we wish to make a few remarks as to its effects and value from experiments that have come under our own observation.

Lime is necessary, nay an indispensable food for all useful plants, without which their natural

health cannot be maintained, nor their functions duly discharged. The quantity to be applied may vary according to the nature and condition of the soil—some lands containing a natural supply sufficient for ordinary cropping; but, as a general thing, most soils require its use in quantities more or less. On stiff clay, land to obtain its full extent, both mechanically and chemically, the beneficial effects of lime, a larger quantity than what is given to light soils ought to be applied. Lime has the singular property of correcting by pulverization stiff clayey soils, and of closing or compacting those that are sandy and light. In either case, however, it is to a great extent inoperative, unless the soil contains vegetable matters producing humus and a medium proper for its reception and efficient action.

The results of the use of lime are, in some instances, almost incredible. The late Dr. Bleatterman, L. L. D., Professor at the University of Virginia, owned a poor worn-out farm in our vicinity on which he experimented largely with lime, has proven its great power and value in the melioration and improvement of poor soils. These experiments were made on land incapable of bearing useful crops, and might have been called sterile, but it was not exactly so, for it brought spontaneously fine crops of sheep-sorrel, broom-sedge, cinquefoil, hen's-grass, &c. On a field of this description, in early Spring, he applied one hundred bushels to the acre. This he covered with rotted straw, corn stalks, leaves from the forest, worthless hay, and all the roots and trash from a new clearing, together with brushwood which he afterwards had broken to such lengths as to be conveniently plowed into the ground. This covering was left during the following Summer and Winter, the cattle browsing all the time on the grass and weeds that came up copiously through the covering. In the month of March it was sowed in oats and clover. It brought a tolerable crop of oats and the clover was well set and thick but never grew high, as he neglected to plaster it. The same land, after another liming of fifty bushels to the acre, with as much manure as would fall to its share from the then scanty resources of the farm, has been gradually improving, and is now one of the best fields of the farm, from which he afterwards cut a good deal of clover, and successive crops of fine wheat, weighing 60 lbs. to the bushel, and good crops of corn.

Our own experience we give in few words. On our orchards, gardens and truck-patches, of gray soil, the use of lime has been all that could be expected or desired.

J. FITZ.

Keewick Depot, Albemarle Co., Va.

Baltimore County Gunpowder Club.

Messrs. Editors American Farmer:

The Gunpowder Agricultural Club met July 10th, 1875, at the residence of B. McL. Hardisty, Edwin Scott foreman. Mr. H. is largely engaged in cultivating fruit and vegetables. On the round of inspection his areas of blackberries, currants, raspberries, strawberries, garden vegetables and the larger fruits were carefully examined with pleasure and interest. The explanations and

opinions of our host were listened to with instruction and profit; they were unmistakably those of the man acquainted with and devoted to his business. The stroll was protracted, and members seemed to linger over the many points which fastened their attention.

The immediate surroundings of the dwelling, the lawn closely shorn, the fine flowers and shrubbery, bespoke care and taste.

The club discussed the following subject: On what crops and in what quantities can we most profitably use commercial fertilizers, and which are best adapted to our locality?

Jos. Bosley thought them best adapted to grain crops. As to best article of manipulated fertilizer he is undecided; can't tell after all trials he has had; he has found a number good; believes it pays best to use bone alone, but it does not act soon enough to make a crop of wheat. The profitable use of fertilizers depends much on the soil, and this changes often in the same field.

A. C. Scott has used phosphates on different crops. They pay best on corn. On wheat 150 pounds are worth more drilled than 200 pounds broadcast. In his experience there is not much difference in the different kinds.

Foreman—His experience is that they pay best on small grain. Last year he put some on corn without benefit; also what he had used this year showed so far no perceptible benefit. When he first used phosphate (Whitelock's) with drill, he filled the box full and opened the feeding orifices wide. The box ran empty in 50 to 60 yards. In the Fall he thought there would be no grain on those 50 or 60 yards, but at harvest the space referred to afforded a yield three times as great as was obtained on the balance, which received 200 pounds per acre as near as he could come at it. A bag left over was put on corn-ground grain; this ripened earlier, and gave an increased yield of about one-third. Question—At what rate do you suppose the fertilizer was applied to the 50 or 60 yards? Answer—At the rate of about half a ton. The spot is plainly marked on the stubble and grass. Question—What extra yield of grain did you get from that spot? Answer—Supposed at the rate of 10 bushels per acre. The growth of grass gives promise of at least one ton extra per acre. [Note—At this estimate some thought the fertilizer did not pay, first cost of it being \$25, and this amount could scarcely be more than covered by the extra yield of grain and grass, saying nothing of labor.] Thinks farmers will have to use something, either manure or fertilizer, to raise grain. In his own case he attributed the decline to growing timothy. Formerly farmers mowed only their lowland meadows, leaving their uplands for clover. Thinks they must return to the old plan.

Dickinson Gorsuch—Fertilizers should be used on grain where we intend to set grass. Last year he tried fertilizers on corn, and though the season was dry he had good results. In applying with grain on land intended for grass, a two-thirds dressing of barn-yard manure should be used with it. Along with such a dressing he had last year used 150 pounds of Whitelock's through the drill, with decided benefit. There was, this season, a more marked benefit from the drill than he had ever known. Last year he used Turner, White-

lock, Sangston and bone on corn, with most benefit from Sangston.

Whitelock is giving the best result this year on wheat, rye and corn. Poudrette had varied. Questioned in regard to his experience confirmatory or contradictory of the theory that artificial manures exhaust land, Mr. G. said he had none sufficient to justify him in expressing an opinion. He expects to make trial of fertilizers, without barn-yard manure, for several consecutive years on a piece of ground intended for forage for soil feeding. The great Lawes' experiment would seem to set at rest all doubt about the deleterious effects of superphosphates and nitrate of soda. Question—Could we be worse off by setting to grass after using fertilizers? Answer—He thought not, particularly if a sod were permitted to form; it is one of the best means of procuring nitrogen.

[Hereupon the talk became general and animated, provoked by an assertion of the speaker that timothy is not injurious to land, in which opinion S. M. Price warmly sustained him, though the larger majority ascribed the fickleness of the wheat production to increased timothy production, and seemed to long for the prosperous old days of lime and clover.]

Jno. D. Matthews—Mr. M. stated that the club's recent visit to his place has made them familiar with his experiments on the just harvested grain crop. He has used Whitelock this year on corn with good result. The fertilizer seemed to hinder its growth at the start, but since the rains it surpasses the non-phosphated portion. In reply to a question whether he has used bone heretofore, he is using it this year. Mr. M. said that he was, probably, the first to use it in this section with encouraging results. Lister's bone, used subsequently, injured the crops to which it was applied and seemed to poison the land. In his farther remarks Mr. M. inclined to the use of manipulated fertilizers in preference to bone. Acquaintances of his in Montgomery county, who buy the bones whole and grind under such safeguards as preclude the possibility of fraud, claim the most satisfactory results from manipulated fertilizers.

S. M. Price—They pay best on grain. Latterly it seems necessary to put on some kind of fertilizer in order to raise a crop of grain. Some years ago he used Coe; it paid. The last two years he has been using Whitelock's alone; it has paid him well, especially this year. Some of the members have seen his grain field. Applied 200 lbs. per acre. He has harvested four times as much wheat as where he put none. The straw is another consideration. He is satisfied the increase in that will pay for the fertilizer. Has tried poudrette on corn, so far with marked result. The quantity necessary depends on the land and the season. This year 400 lbs. per acre would have paid better than 200 lbs. In other seasons that amount might have been an injury. So far he is satisfied to use Whitelock until something better presents itself. For corn he thinks poudrette the very thing; he used of it 250 lbs. per acre.

I. M. Price—With the exception of a fertilizer of his own manipulation, he had used only bone and Whitelock. His own cost him \$30; it was troublesome to make; acted well on second crop.

The bone was applied several years ago at the rate of 400 lbs. per acre; its beneficial effects are still visible. Fertilizers pay best on small grain crops, though he tried some on oats without benefit. Last year he applied Whitelock with the drill on wheat, at the rate of 200 lbs., with good result. This year he had used it broadcast at the rate of 200 lbs. per acre,—experimenting on two single acres with 300 lbs. on one and 400 lbs. on the other. The latter was slightly the best, though the test was hardly fair, as the 400 lbs. acre lay on top of a hill which was bare all winter. Where 200 lbs. had been applied, though the best ground, the wheat was scarcely worth cutting. Thinks this unfavorable result in part was due to the wheat on that portion being of an inferior variety. Has never tried manipulated fertilizers on corn; they are of no benefit on potatoes.

B. McL. Hardisty—His experience is favorable to all fertilizers. The theory that commercial fertilizers exhaust land has been worrying him, though he has never used any on any crop or land without benefit. For his operations he wants nitrogenous fertilizers. Frank Coe's on potatoes did little good, but benefitted the succeeding crop. He has used Zell's and poudrette; the latter is good; he puts it on heavy. Most other fertilizers are bought at treble the price asked for it. It contains many excellent elements and he believes the article free from adulteration. Question—Have you any reason to believe that phosphates exhaust soil? Answer—He has not. The questioner thought the exhausting theory a parallel to the objection formerly urged against plaster.

Joshua G. Bosley (Junier's delegate.)—He thought fertilizers beneficial to the cereals and grass. A piece of ground in corn two years ago and entered for the club's prize had been well phosphated—the grass on that piece shows a most marked difference in comparison with the adjacent ground. Turner shows best on this farm. They had an opportunity of judging last year, when 8 to 10 varieties were tried in the same field. The decrease in the wheat crop, both here and in the West, is due to the constant drain of the elements necessary to its growth without their replacement. We can raise plenty of straw with manure, but phosphate is needed to make the grain. In regard to clover and timothy, the latter is as hard on land as wheat, even if left to fall, whereas clover or peas supply the so much needed nitrogen.

Mr. S. P. Bosley entertained the club with the recital of some marvellous results obtained by the use of plaster on a worn-out tenant farm.

Subject selected for discussion at next meeting: Does pasturing land after harvest injure the succeeding crop?

Adjourned to meet August 14th at the residence of Josh. M. Gorsuch.

Baltimore Co., July 20, 1875.

T. G.

REPORT OF THE MACHINERY COMMITTEE OF THE GUNPOWDER AGRICULTURAL CLUB ON CORN-WORKING IMPLEMENTS.

*The Machinery Committee appointed by the Gunpowder Agricultural Club made the following report at the last meeting of the Club.

Requirements agreed upon by Committee and accepted by the Club—Durability; non-liability to get out of order; performing as well on hilly as on level or rolling land; doing most work with easiest draft and least labor.

To the Gunpowder Agricultural Club:—The trial of corn-working implements, the arrangement and conduct of which was confided to us, came off on the 17th of June on the farm of D. Gorsuch. Thirteen implements were entered.

The drag, single and double shovels, with separate reversible cast points, manufactured by Evan Davis, are so well known, and in such general use among us that any commendation of their efficiency on our part would be superfluous.

John Knight, of Hereford, entered an iron drag and double shovel plow. Both worked well, especially the drag, which is constructed on a new plan like the iron double shovel with curved legs and steel shovels; seems to be durable and is offered at a cheap rate.

Griffith & Turner, of Baltimore, entered an iron double shovel plow which, however, possesses no advantages over those in common use.

Woolsey Harrow.—This implement was introduced among us by S. M. Price, a member of the Club, who first saw it on the farm of Wm. Woolsey, the well-known grazer of Harford county. It has thirteen teeth, square at top, flattened below the frame and curved forward. It is drawn by one horse. It scarifies the ground thoroughly and its use is admissible at an early stage of the corn's growth, being preceded in order only by the Thomas harrow and when the employment of the drag or cultivator would be out of the question. It is well adapted to drilled corn.

The Malta cultivator (for two horses) entered by Thos. Norris & Son, of Baltimore. The construction of this implement is entirely new and novel to us. It is provided with wheels and two double shovels playing from an axle. It straddles the row and completes its working. Its examination was too imperfect, for want of time, to justify a conclusive opinion concerning its merits. It was therefore left with our chairman for a more extended trial.

The Granger cultivator (for two horses).—This implement was forwarded for trial by the editors of the *American Farmer*. Like the Malta it is constructed by combining two double shovels so as to straddle the row and complete its working as it proceeds. In forming a judgement of its value we found ourselves in the same dilemma in which the Malta placed us, and we have gotten rid of it by the same process, in both cases with the consent of our chairman, whose report is herewith appended.

Signed,
DICKINSON GORSUCH,
EDWARD SCOTT,
S. M. PRICE,
EDWARD H. MATTHEWS.

The Malta is not adapted to hilly land, but works well on level or rolling land. Its draft is very light, the horses carrying it with ease in the hottest weather, and with a rapidity astonishing to those who are accustomed to using the ordinary double shovel. A hand of ordinary diligence will work ten acres a day with it. It is easily controlled and being pro-

vided with fenders requires no following, while at the same time the fine earth sifts through and fills the steps. It was worked in drilled corn only.

The Granger I found useless on hilly land, but it puts the work ahead rapidly on level land. I should not be willing to put it into the hands of any other than the most intelligent class of farm laborers. DICKINSON GORSUCH.

Our French Letter.

To the Editors of the American Farmer:

Fertilizers.

Independent of all the facilities that exist for obtaining the aid of analysis, and of the official warnings and punishments, the frauds in commercial manures were never so rampant as now. They increase in proportion to the demand for fertilizers. This state of things can only be attributed to the inability of farmers to emancipate themselves from dependence on local dealers, so that the efforts being adopted for farming societies, to collectively guarantee the purchases of members from responsible manure agencies, must have everybody's good wishes. The plan ought to be as beneficial as farmer's clubs, insuring their own live stock and their crops against hail storms. Agriculturists are commencing to learn that there is no manure veritably complete in itself, even guano must have a complement in the case of certain soils. The best plan is for the cultivator to have recourse to various manures; the wise merchant never puts all his goods in one ship, nor the market man all his eggs in the one basket. In the North of France, where nitrate of soda has been employed five years in succession, it has finished by exercising no influence at all on the production of beet. Analogous results are to be witnessed in Vaucluse, where the use of oil cake as a manure has ceased to be advantageous in the production of the chief crops of that region, namely, madder. When one makes use thus of an unique manure, the food of plants presents itself no more in that total of immediate principles that vegetation demands from the soil. Neighboring farmers club together to purchase costly machines; now a very useful machine in connection with the foregoing remarks, has appeared lately at shows, being destined to mix and grind artificial manures. The farmer buys the raw materials pure, mixes them on his premises, and in proportions suited to his land. The machine can be either worked by the hand, or turned by a connecting strap to a steam engine or horse round, and the teathed cylinders revolving in a wooden receptacle, can be graduated so as to reduce the mixture to a fixed degree of pulverization. Bear in mind, that science and practice recommend the presentation of artificial manures, in the most impalpable form, in order to produce immediate effects on a crop. Many French agriculturists, who contract for stable, &c., manure in the cities, in order to lessen carting, deposit the loads on the headlands of the fields where it is intended to be employed; a layer of earth two feet deep is placed as a base, and the heap is also coated with the same. The rain is thus excluded, and the valuable products of fermentation secured.

Sheep Husbandry.

In the question of sheep farming, many farmers are inclined to hunt two hares at once; that is to say, desire to have both wool and meat at the same time. For France, nothing is clearer than that the preference ought to be given to the precocious production of meat. Often there is only Hobson's choice, as to the production either of wool or meat depends on soil and climate. For example: sheep with wool fine and full, like merinos, do not succeed on poor and humid soils; in all seasons they demand a good supper and a good bed, to nourish and develop their beautiful fleeces. Further, fine wool breeds have want of a dietary more succulent and choice, than those intended ostensibly for the butcher, the latter possessing simple habits, and a facility for being reared. M. Mayre, an eminent sheep farmer, contrasts the profits of rearing merinos for their wool, and Southdowns and their crossings for their flesh. Taking one of the former he shows, that during four years at the end of which it will be slaughtered, the net value of the wool for that period is fr. 74, and the meat and offal, fr. 102, or a total of fr. 176. In the case of the Southdown, sold to the butcher at two years, the total wool produced is fr. 17, and the meat, &c., fr. 118, making a total of fr. 135, or for four years, with two Southdowns, fr. 270; showing a difference, as compared with the merinos net value, (fr. 176) of fr. 74. Thus taking a base of four years, the profit is in favor of rearing and fattening two Southdowns during that period, rather than one of the best fleeced merinos. Then as meat sells at nearly the same price as wool, profits are more promptly realized.

Forage Plants.

The dry Spring and the present continued drought have seriously affected the yield of forage plants. As last season, there will be a great scarcity of fodder, but farmers are now resorting, before it is too late, to sowing substitutes. The short supply of food comes unhappily after a Winter, where most animals "to be saved," had to be put on short commons, the owners calculating on Spring for a supply of succulent food. Buckheat is a favorite, it can be sown up to the early days of July, and thrives on poor soils only partially manured; the earlier buckwheat is sown the better will be the straw for forage; weight for weight, the grain has double the nutritive value of hay. Hungarian moha has many admirers; it belongs to the grass-tribe of plants, vegetates with great rapidity and victoriously supports drought; in two months, when not intended for seed, it can be cut; it suits average soils, if sandy or calcareous so much the better, and a slight dusting of commercial manure will work wonders; horses and cattle relish it, but its stems are too hard for sheep; if cut before flowering, it will push forth a vigorous aftermath, making excellent pasturage; it can be sown as late as the middle of July, and later even, if intended to be consumed green; the seed is very fine and light, and requires to be mixed with ten or fifteen times its volume of fine sand before sowing; 3 lbs. of seed are sufficient per acre, and many sow double the quantity; the soil being well pulverized and the guano, &c., scattered, the seed is then sown and

harrowed in by means of a thorn-bush harrow. Poultry like the seed, and horses the stems after being threshed. In France, *moha* succeeds best when near the sea. Buckwheat when intended as forage for horses, is generally sown mixed with oats and barley, the former above all, and with white mustard, when intended for cattle. Given abundantly to sheep, buckwheat afflicts them with giddiness, their ears and head become swollen, and they cannot bear the rays of the sun.

These intercalary or stolen crops do not supersede the culture of maize, where circumstances suit, of its consumption, and preservation in pits in a green state for Winter and Spring feeding. Nor should it be forgotten, that in the case of damaged fodder, of hard or large stems, of potatoes, beets, turnips, Jerusalem artichokes, cut and mixed with chaff, colzapods, chopped straw; watered with a solution of salt or oil cake, and allowed to ferment 24 hours in Summer, and 36 in Winter, form a mash that live stock will eat with avidity. In the East of France the best agriculturists largely cultivate Jerusalem artichokes; the stems are as much appreciated as the roots, and horses receive as many as 20 lbs. of the latter daily.

In the feeding of cattle as a general remark, it is well to bear in mind, that under-feeding is a mistake. Animals ought to be considered as machines, which transform into divers products, the aliments they consume; their keep will be most lucrative, in proportion as they best utilize at least expense, the matters given them to transform, either into meat or milk. Good feeding is essential in the case of well-bred animals, to maintain their vigor, precocity, and special aptitudes, otherwise they will be only so many costly machines for producing manure.

The Cheese Product.

France imports largely Dutch cheese, familiarly called "Moors' heads;" these alone resist long voyages on sea and warm climates. Experiments are now being conducted to prepare this kind of cheese in Auvergne, which in point of milk-produce, very much resembles Holland. The fatty matter which cheese contains, and that imparts to it, its fine and savory taste, is at the same time the most active cause of its decomposition. In Holland the milk is partly skimmed more of the fatty matter escapes in the breaking and drainage of the curd, and the rest exudes during the pressure. To eliminate all cream is the secret in the preparation of Dutch cheese; and the salting of it during ten or twelve days, the use of lukewarm brine baths, coating it with linseed oil and color, to give it a crust, and well drying in airy rooms, complete the preparation. According to the learned M. Pasteur and other chemists, milk coagulates from the presence in grand quantity of microscopic beings.

Miscellaneous.

The laying of corn from natural causes is attributed to a bad organization of the woody fibre, which induces a weakness in the stem. The experiments of Koch confirm this view; he has shown, that the absence of light produces a lengthening of the stem and its cells, at the expense of their thickness; such was what

he detected when rye stems were covered either in whole or in part, by earthen tubes, and this weakness was most preceptible about the lower part of the second knot in the stem. The absence then, or feeble presence of silica in the stem is not to be considered as the cause of the weakness; too rich manuring produces the same effect as shade, by augmenting precociously the foliage, and thus shade; and similarly may be explained the feebleness of stems, in the case of thick sowings—they exclude the light.

The cure for the vine bug has not yet been found, but it would be wrong to assert no progress has been made. The whole matter is in a state of continued experiment. The sulpho-carbonate of potassium, as recommended by the celebrated chemist Dumas, to be applied in a state of solution, could not be carried into practice; the quantity of water required being too great. Dumas now suggests the employment of 3 parts of Peruvian guano, 1 of well-burnt gypsum, and 1 of the sulpho-carbonate, mixing the first two well before adding them to the latter; the paste which is formed can be pulverized readily after the lapse of twenty-four hours; 2 cwt. of the mixture will be enough for an acre; and the portion for each vine ought to be placed at the depth of seven inches in the soil, selecting moist or threatening weather for the purpose. All this has yet to be tested on the large scale.

In the South of France and in Spain, clover and lucerne are severely attacked by a small black insect called *colaspæ*, which eats the leaves. In the early morning a trough moving on wheels, and putting in motion a light thin board, by means of a connecting belt, is pushed over the field; in its passage this board or fan, gently shakes, without breaking them, the leaves and stems, so that the bugs fall into the trough, out of which they are taken and burned, or killed with boiling water. To destroy that terrible weed, meadow saffron, eradication plant by plant is the only remedy. F. C.

Paris, June 12th, 1875.

Wire Grass.

FREDERICKSBURG, VA., July 9th, 1875.

Geo. C. Gilmer, Esq.

My Dear Sir:—Noting your inquiry about wire grass in the current No. of the *American Farmer*, I take the liberty of enclosing you a specimen of the *genuine*, with which to compare with that you speak of. Here it is esteemed a great enemy to tillage; it thoroughly mats in the soil, and if it has been standing any length of time the mass of roots is so great they have to be harrowed and worked on top and burnt; it is a good deal like digging sweet potatoes; when they are matted it is a fine pasture for any kind of stock; in tolerable soil it will grow knee high (if not grazed) and produce grass like the kind I send you; the running joints as produced were not thick.

I am a new comer here from the blue grass region under the Blue Ridge, and with the thorough cultivation we give there it would not interfere with the corn crop, but I think wheat could not be raised from a fallow if it had been standing two or more years. It is certainly

a great blessing here, in this dry sandy soil, and it seems to me the stock would starve without it.

My garden is a large one (cultivated almost entirely as a truck garden with horses;) it had a great deal of wire grass last Spring a year (1874) my first experience with it, it gave me but little trouble and this Summer none. I dug several Irish potatoes last Fall that it had grown through.

I think I had spots of it on my farm in Rappahannock county, but they increased very slowly if at all; there it was smothered out by other grasses and weeds; here in poor soils *other grasses and weeds* will not grow, and the wire grass has absolute possession and spreads rapidly. I'm told here hogs are very fond of the root and will exterminate it.

Your letters in the *American Farmer* have given me much pleasure, and I am going to try the pea fallow here; last year I sowed buckwheat as soon as I cut the oats, turned it under and sowed wheat, and have just threshed 25 bushels to the acre. I however spread 5 bushels oyster-shell lime to the acre.

I beg pardon for troubling you with so long a letter.

Yours, JOHN G. LANE.

Morea, near University of Virginia,
July 13th, 1875.

John G. Lane, Esq., Fredericksburg, Va.

My Dear Sir:—Your very kind and instructive favor of the 9th and its accompanying sample of wire grass reached me in such good condition I was able at once to see it was the same I had found in the garden walks here, and is said to have been brought from Bermuda by Mr. Emmet, one of the first Professors at our University of Virginia. Please accept my sincere thanks for your great kindness. From its thick, close, luxuriant growth and its great tenacity of life, I had supposed it might possibly prove a very desirable grass upon some of our back and wasted lands, (which we are not now able to improve, and may not for many years,) as a very fine sheep walk,—for, dog law or no dog law, we Virginians will be compelled to go largely into the sheep business, at least until the seekers of good, quiet, peaceable, profitable homes can learn more of this our most favored Virginia.

In truth we Virginians have a most desirable and productive country, but we are unable now fully to develop it, and have been too long idly waiting for emigrants to do it for us, until we now can wait no longer, and so we have wisely resolved to go to work and do it ourselves. We must secure a good cover for our farms of the clover and best grasses, and the cheapest and longest lived grass for our back or wasted lands to fall back on at the time we do not wish to use our better lands and favorable lots; and from what I have seen of this wire grass, I conclude by checking off these lands 3x3 feet and setting a few joints at every crossing, in a very few years it would become one solid mass that would afford more hard grazing than I had ever seen. What think you, Mr. Lane, or can any other of the many readers of the *American Farmer* give me their good opinion on this important subject, for we Virginians are now greatly in earnest, and will be very grateful

to any and all from everywhere for their kind assistance; for crowding in amongst us, lending us a little of their surplus money, or kindly extending to us their good advice. A goodly number of these, unable to buy our lands, but with means and experience to make good tenants, would cheer us much by doing well for us and better for themselves, and would be warmly welcomed by every warm-hearted Virginian. Can't you or some reader of the *American Farmer*, or its sage old or its most promising young editor, give us a good article or agreement for tenant and rentor; such an article is now greatly needed in Virginia. Now we can't sell, and must rent or lease; we can't much longer risk the too high price and too often unpaying bought manures, and must now make more ourselves and push forward, (I think) our better-paying green fallows. Won't Mr. Lane press his experiment of buckwheat to another trial, along with the pea fallow. If he had put two bushels of the lime per acre, and then two with the wheat, I believe he would have done fully as well as he did by his heavy application of 50 bushels, and he could have gone over so much more land and fully as well secured as much crop per acre, at least such has been my experience fairly tested side by side, from two to thirty bushels per acre. Were I now called on to select the mode of farming and improving the lands of a vast majority of Virginia farms, I would say peas and buckwheat, with two bushels of lime, one of salt and one of plaster, and, if to be had, all the available ashes per acre for wheat, and if done at the right time and as it should be done, nine times out of ten the results would be more satisfactory than the bought manures; always seeded to clover and the grasses and well protected until the Summer following. For tobacco, I should gather and apply all the manure I could well prepare, and when working the tobacco for the last time I would sow a bushel or a bushel and a peck of rye and a bushel of plaster per acre, which would protect the tobacco when cutting from dirt and grit, and save it from sun burning; keep all stock off and plow it in about the last of May or first of June; harrow lightly and check off with the coulters reversed in the beam. Make a small flat hill, and when working do not disturb the rye, which I think would nourish and keep moist the plants, and thus continue with no other manure. We would not be troubled with worms, make a finer textured article, and a greater yield and profit than by changing our lots and using manures. I see where this mode has been tested for 14 years, and the last crop was the very best of any and his other manures were applied to other crops and lands,—all of which fully attested to this mode being the most profitable and less expensive and improving faster than any he had.

Yours truly, GEO. C. GILMER.

[We should be glad to have Mr. Lane, or any other of our readers, give us a draft of a lease suitable to Virginia, as requested by Mr. Gilmer. We had prepared a copy of an agreement in common use in this State, but prefer to call for the information desired upon our Virginia friends, as the requirements of the law may be different in their State.—Eds. A. F.]

Bermuda Grass.

Messrs. Editors American Farmer :

I have been anxious for several years to procure a grass that I can rely upon for "a catch" on my worn out fields. I think this year's experience with timothy, clover and orchard grass will induce the thoughts of many farmers in this section, to run in the same channel. We have had a demonstration, this season, that farming (raising of grain) does not pay on our worn-out soil. We are now turning our attention, more year by year, to sheep, and are now grazing them in considerable numbers. For success in this direction we need more grass and more hay.

Several years ago I had my attention called to Bermuda grass, in reading "Randall's Sheep Husbandry." In which work Mr. Affleck's testimony is given in high praise of this grass. In reference to Bermuda grass, Mr. A. states: "it is preferred by stock of every description to all other grass and it grows luxuriantly in every kind of soil," at the time, I made considerable enquiry about this grass, but no one of whom I enquired, seemed to know anything of it. Lately my attention has been called to it again, in reading a "Manual of the Cultivation of the Grasses," by Mr. C. W. Howard, and also in a prize essay on Grass Culture, by Mr. Francis Fontain, of Georgia, both of whom recommend Bermuda grass highly.

Upon inquiries being made of some of the Agricultural houses in Alexandria, Richmond, and Memphis, I could not obtain any information concerning it. It is said to be propagated by roots, and I am anxious to know,

Where the roots can be obtained?

The quantity required to sow an acre, and the cost? and how it will do in this section?

If you or any of your readers can throw some light on the foregoing questions, it may lead to the means of improving many of our poor farms. Respectfully, yours, &c., W. H. B.

Prince Wm. Co., Va. July 3d, 1875.

[We think it probable the the roots of Bermuda grass can be procured from Mr. Mark W. Johnson, seedsman, at Atlanta, Georgia. Our correspondent will probably find if his climate suits it, that, like fire, it is a "good servant but bad master."—Eds. A. F.]

The Maryland Agricultural College.

Messrs. Editors American Farmer :

I have just come across a copy of my report made to the Trustees of the Maryland Agricultural College in 1873, which I send you as a link in the earnest effort I had long since made to bring the college down to the legitimate course of instruction for which it had always seemed to me it was especially founded and organized.

The letter referred to in the resolution (which was drawn by Gov. Whyte during his official connection with the college) was written by me and addressed to a former committee on the curriculum, urging upon that committee the reform I had so long labored to bring about in the college.

The resolution with which this report concludes was, after a warm and earnest debate, finally adopted by a vote of 9 to 2,—all the members of the board, including those representing the State, being present.

Could the college have been reorganized and administered according to the spirit and intent of this report, I have no doubt it would now be in a healthy and flourishing condition, and in the end have proved very valuable and useful to the State.

Simply to vindicate my own persistence and consistency in laboring to bring the college strictly within its appropriate sphere of duty, is the object of this note and the copy of the report which I now send you.

Yours very truly, A. B. DAVIS.

Greenwood, Md., July 15th, 1875.

[Our space not admitting it in full, we make an abstract of the report submitted by Mr. Davis as chairman of the committee appointed under the resolution to which he refers, and which reads as follows:

"Resolved, That the committee on the curriculum heretofore appointed, be reorganized, and that a committee of six, including the members of the committee heretofore appointed, to whom shall be referred the question of a reorganization of the college and a new curriculum, and that the letter of the President of the Board of Trustees to the old committee be referred to the newly appointed committee."

From an examination of the language and evident intent of the charter, the report shows that the organization then existing (May, 1873) was not what was designed when the act was passed by the Legislature, and expresses surprise that the error should have been made of "attempting to build up an agricultural school upon the usual university and collegiate course," a mistake the committee believes to have been the cause of the disappointment and failure of the college to fulfil the object for which it was originated.

The provisions of the act of 1865 conferring on this college the proceeds of the sale of public lands donated by Congress are then examined and declared only to admit of the construction, that whilst other scientific and classical studies are simply not excluded, the branches relating to Agriculture and the Mechanic Arts are required to be taught.

Of the course of study then pursued at the institution, the committee say, "it is of a classical and mathematical school—claimed by none to be of the highest order—while there is no mechanical or special agriculture given; no experiments as required by law; very little or no object-teaching; no road making, drainage or irrigation; no engineering or rural architecture; no farming or farm culture in any regular

or systematic order; and but little industrial education."

The committee add that Latin, Greek, Mathematics, the Modern Languages, &c., are, in their proper place, excellent and valuable, but that they are not exactly in their proper place in an agricultural and industrial college, when they become the *leading* objects of instruction. A young man, they think, when he leaves a college like this, ought to be fitted for the practical duties of life. His Latin and Greek and higher Mathematics ought to be subordinate to this, to him, indispensable knowledge. Without this kind of instruction the industrial classes fail to receive the benefit and advantage for which agricultural colleges were erected and endowed. To ignore or subordinate this fact, is to disappoint public expectation, to non-fulfil the law, and to bring this college into disrepute.

The report concludes that "with a view of bringing the Maryland College into harmony with the terms of the charter, the land grant of the United States, and the wants and expectations of the people," the adoption of a resolution is recommended that the Board, constrained by a sense of duty to the obligation of the trust confided to them, and with a view to give Agricultural and Industrial Education the most prominent place in the college, declares all engagements with the professors at an end after the usual notice.]

The Agricultural College.

To the Editors of the American Farmer:

I see that the Directors of the Agricultural College have appointed Capt. Parker, ex-captain U. S. Navy, as president. I suppose realizing the fact that as an agricultural college the institution is a failure, they have concluded to turn it into a naval academy for the education of the officers of the Oyster Navy, and the State man-of-war employed in the winter near Havre de Grace to protect the ducks. I hope now the State will build or buy that practising steamer for the use of the students. I believe the president has power to fill the remaining offices in the college, temporarily, and no doubt parties could be found who know all the nice visiting places on the bay shore. I shall wait for the developments. I hope that the people who wanted an agricultural college will be satisfied, and not say with Artemus Ward, "Why is this thus?"

PROGRESS.

SWEET POTATOES RUNNING TO VINE.—A correspondent in Beaufort Co., S. C., writes: "I noticed last year that one of your correspondents complained that his sweet potatoes ran to vine, and bore nothing. Advise him to apply either salt or lime, or what would probably be better still, the salt and lime mixed." He adds: "It is very dry here, (July 8th.) Nothing can grow, much less bear, in my garden."

Experiments with Wheat and Grass.

Messrs. Editors American Farmer:

Inclosed are a few experiments made the present season on our farm. If you think them of interest, they are at your service.

JOHN I. CARTER.

*East Penna. Experimental Farm,
Chester Co. Pa. July, 1875.*

Varieties of Wheat.

The following comparison of varieties of wheat was made upon oats-stubble ground, lightly manured with barn-yard manure, and acidulated South Carolina rock. Plowed Sept. 4th, and seed sown Sept. 28th, and harrowed in at the rate of two bushels per acre. Plots contained $\frac{1}{2}$ acre:

No. of Plot.	Color.	Smooth &c.	When Cut.	When Ripe.	Straw P.A.	hus. P.A.
1. Herne Wheat, from Kentucky.....	White.	Smooth	July 9.	July 7.	1,120	8 36-60
2. Winter Oats, from Va.—winter killed.	Red.	Beard'd	"	July 9.	1,720	12
3. Red Chaff Mediterranean.....	"	"	"	"	2,360	14 44
4. Britany.....	Amber.	"	"	"	1,700	11 08
5. Old White Chaff Mediterranean.....	White.	"	"	"	1,840	13 24
6. Weeks' White.....	"	"	"	July 8.	2,321	14 36
7. Jennings.....	"	Smooth	"	"	2,480	22 40
8. Clawson, from New York.....	Amber.	"	"	July 9.	2,858	18
9. Rogers.....	"	"	"	July 7.	3,300	22 46
10. Fultz.....	"	"	"	"	"	"

The continued sleet of last winter killed out and injured our wheat largely. The crop was also shortened by the attacks of the army worm. The damage to the wheat crop by this worm will probably be under-estimated. It does its work quickly, and from its color it may not be noticed. Upon threshing, many grains will be found to be injured. The Fultz wheat still seems to be our most productive wheat, and last winter it proved to be hardier than most varieties.

The Clawson wheat is well worthy of further trial. It stood the winter well; has long heads and good straw. The berry is the finest we raised. The Herne wheat has a very fine berry,

but proved too tender for such a winter as last.

Fertilizers on Wheat.

The ground used in these experiments was an oats-stubble. Plowed Sept. 1st to 4th. Fertilizers sown broadcast, at the rate of \$9 worth per acre, and harrowed in; sown Sept. 28th; wheat drilled in on same date, at the rate of 1½ bushels per acre. Plots contained ¼ acre. Wheat was cut July 9th and threshed July 15th.

No. Plot, Treatment, Fertilizers, &c.	Fet. on ¼ A.	lbs. Straw.	Bus. per A.
1. Barnyard Manure.....	1 bus.	3,330	22 40 60
2. No Fertilizer.....		2,800	19 44
3. Common Salt.....		2,928	24 32
4. Acidulated S. C. rock drilled in.....	75 lbs.	3,520	25 30
5. Boston Animal Fertilizer.....	45 "	2,960	20 20
6. Nitrate of Soda.....	20 % "	2,400	20 16
7. Mariate of Potash.....	37 % "	2,410	20 32
8. Sulphate of Ammonia.....	17 "	2,790	21 20
9. Acid. S. C. Rock, double quantity.....	100 "	3,120	24 04
10. Ground Bone, double quantity.....	90 "	2,800	23 30
11. Acidulated S. C. Rock.....	75 "	2,580	20 14
12. Bone Super-Phosphate.....	40 "	2,840	24 42
13. Ground Bone.....	45 "	2,980	21 12

The exceeding drouth of the past season was unfavorable for satisfactory results from the use of fertilizers, and their application did not pay in the present crop. It may be noticed that when the fertilizer was drilled in with the wheat, we had the best results, and this agrees with past experiences: that nearly all commercial fertilizers do best if plowed down or drilled in, at least to be thoroughly covered up in the moist earth. It is apparent also that concentrated fertilizers like sulphate of ammonia, nitrate of soda, &c., would be more valuable if dissolved in water and their bulk increased in some way before application. It is also desirable to have fertilizers applied early in the season to whatever crop they are to be used upon, thereby giving them a better opportunity to become fitted for the needs of the plants.

Different Modes of Putting in Wheat.

These plots contained ¼ acre; were plowed Sept. 3d and the wheat sown Sept. 28th; all fertilized alike, and Fultz wheat used as seed.

No. of plot.	lbs. straw.	lbs. wheat.
1. Two bus. seed drilled in per a.....	420	125
2. One and one-half bus. drilled in per a.....	329	108 ½
3. Two bus. plowed in shallow.....	420	157 ½
4. Two bus. seed sown broadcast and harrowed in.....	400	170 ½

For the last six years the experiments on this "Farm" have been in favor of broadcast seeding for wheat. There seems to be no way to account for this fact except by asserting that drill teeth as usually made deposit the grain in such narrow confined rows, that the roots are injuriously cramped, and the development of the plant hindered. There is a new drill tooth in use in some places that distributes the grain in wide drills, say 4 inches, which may partly overcome the difficulty above mentioned. An experiment in that direction will be made the coming season.

Fertilizers on Grass.

These fertilizers were sown April 14, 1875, at the rate of \$9 worth per acre on first crop timothy and clover; or, in other words, on wheat-stubble ground. The ground was poor, and the season unfavorable.

The grass was mowed June 29th, and hay put up dry and weighed June 30th.

PLOT.	KIND OF FERTILIZER.	lbs. ½ A.
1.	Nitrate of Soda.....	110
2.	No Manure.....	98
3.	Sulphate of Ammonia.....	225
4.	Barn-yard Manure.....	187
5.	Ground Bone.....	300
6.	Bone Superphosphate.....	208
7.	Acidulated S. C. Rock.....	255
8.	Mariate of Potash.....	255
9.	Philadelphia Ground Bone (Baugh's).....	168
10.	Challenge Superphosphate (Baugh's).....	390
11.	Acidulated S. C. Rock (Watson & Clark).....	408
12.	Cope's Ammoniated Superphosphate.....	375

The Effects of Subsoiling on Grass.

The plots testing plowing were plowed for corn in 1872; then again in 1873 for wheat. Those marked "C. P." were plowed with a common plow about seven inches deep. Those marked "S. P." were subsoiled sixteen inches deep for corn, and 12 inches deep with a double Michigan plow for wheat, resulting as follows—plots containing ¼ acre.

PLOT.		lbs. of Hay ½ A.
1.	Plowed with Common Plow 7 inches deep.....	270
2.	" " Subsoil " 16 " ".....	250
3.	" " Common " 7 " ".....	260
4.	" " Subsoil " " " ".....	195
5.	" " Common " " " ".....	210
6.	" " Subsoil " " " ".....	240
7.	" " Common " " " ".....	255
8.	" " Subsoil " " " ".....	215
9.	" " Common " " " ".....	235
10.	" " Subsoil " " " ".....	140
11.	" " Common " " " ".....	340
12.	" " Subsoil " " " ".....	216
13.	" " Common " " " ".....	212
	Average of subsoil plots.....	212
	" " common plow plots.....	263

The Effects of Lime on Grass.

These plots contained ¼ of an acre, were in wheat last year, at which time the lime was applied. Lime spread upon the surface and harrowed in previous to seeding to wheat. This ground had not been limed for ten years previous, and was in poor condition. The Spring was also unfavorable for the growth of clover, hence the crop was light. The plots were mowed June 28, and hay weighed dry June 29.

PLOT.	QUANTITY OF LIME ½ ACRE.	lbs. of Hay ½ A.
1.	Lime, 50 bushels per acre, Common Plow.....	203
2.	" " " " Subsoil " used.....	218
3.	" 100 " " " Common " ".....	185
4.	" " " " Subsoil " ".....	263
5.	" 200 " " " Common " ".....	215
6.	" " " " Subsoil " ".....	243
7.	No Lime used, Common " ".....	200
8.	" " " " Subsoil " ".....	178
9.	" " " " Common " ".....	190
10.	" " " " Subsoil " ".....	212

In this year's experiments, as well as that of previous years, the use of lime on *our soil* has not proved very efficacious. It is proper to state that 15 or 20 years ago this farm was heavily limed, and, perhaps, yet contains a sufficiency in the soil.

J. I. C.

A Neglected Source of Ammonia.

The cost to farmers of nitrogen is so high, it is a subject of regret that any source from which it can be derived at a moderate rate should be neglected. Sulphate of Ammonia is being very largely used as a fertilizer, and any process by which its production could be increased and its cost lessened, would meet with favor from agriculturists. Our attention is called to the subject by the following letter:

To the Editors of the American Farmer:

The sulphate of ammonia made at the gas works at Cincinnati and Brooklyn, New York, contains about 35 per cent. actual ammonia, and sell at from 5 to 5½ cents per pound; large quantities are produced from this source both in this country and in Europe. At Cincinnati, it is quite a success; the gas liquor at Baltimore, or Philadelphia has not yet been utilized for this purpose, owing to its poor quality, but it can easily be made of the proper strength, and in doing this, the gas is improved one candle, or about 14 per cent. The Philadelphia gas works consume 225,000 tons coal annually which will produce gas liquor, from which can be made by late processes 2,225,000 pounds sulphate ammonia at very cheap cost, and the Baltimore gas works can do the same thing in proportion to the coal consumed, yet this valuable ammoniacal liquor is allowed to run to waste.

Yours truly,
C. L. OUDESLUYS.
Baltimore, July, 6th 1875.

Army Worms.

A Harford county correspondent of the *Gazette* of this city has forwarded a few worms found on the growing wheat in the neighborhood of Bel-Air, which, it is said, muster in stronger force than did the Colorado beetle the first year of its appearance. Prof. P. R. Uhler has received a bottle containing a caterpillar and some pupæ of an insect feeding upon the heads of wheat, supposed to be the same as that alluded to above, of which he says:

Upon examination it proves to be one of the army-worm species, but which one I cannot know with certainty until the moth hatches out. This, I presume, will take place in from ten days to two weeks.

It looks like the army-worm of the South, which did such damage to growing crops in Georgia and elsewhere a few years since.

These caterpillars are apt to appear suddenly in vast numbers to eat up every growing crop.

As this species attack the wheat in the head, it might be swept off into a bag-net of coarse cloth, and then destroyed by trampling beneath the feet. Respectfully yours, P. R. UHLER.

Agricultural Calendar.

Work for the Month—August.

Though a farmer's (like a woman's) work is never done, yet in this latitude he probably finds in August more opportunities for leisure than in any other month in the year. Yet, though things may be taken easily, there are enough to be done, and the more thoroughly and promptly they are performed the easier will that which comes afterwards be disposed of.

Plowing for Wheat.—The sooner this is done the better, and the more thoroughly, too, the greater will be the advantage in every respect. Deep plowing largely insures against winter killing, the escape of superincumbent water being facilitated by the loosening up of the soil. Do not turn under too deeply, however, manures for wheat.

Sowing Rye.—It is preferred by some to sow this grain during this, others delaying till the beginning or end of next month. This crop is becoming a much greater favorite in this State than formerly, especially in localities convenient for sending the straw to market. On our own farm it generally averages better than wheat.

The machines now made for threshing without breaking the straw, saves much labor in its management.

Rye prefers a loam with considerable sand in its texture, and, as with wheat, extra care in the preparation of land and seed will give extra returns at harvest. Ten good loads of barn-yard manure; 300 lbs. of a reliable superphosphate, or 200 lbs. of bone dust and 150 lbs. Peruvian guano, and one bushel of salt, will, on most lands, prove profitable applications. Five pecks of seed to the acre is enough, and it is preferable to put it in with the drill. If it grows too rank, either in the Fall or Spring, it can be grazed by either sheep or calves without injuring it.

As a forage crop for early cutting, rye is very valuable, and is coming very largely into use. With dairy farmers it is now almost indispensable as a provision for early green food.

Turnips.—Ruta Bagas may be sown not later than the first days of the month. From the 10th to the 20th is the best time to sow flat turnips. The white or purple-top strap leaf is the favorite here. The seed is sown broadcast and lightly harrowed or brushed in. One pound is enough for an acre. The ground ought to be in good condition, and an application of superphosphate or Peruvian guano will give the plants a quick start and tend to insure a crop. Give 300 lbs. of phosphate or half that of guano. Ashes are also well suited for turnips.

Potatoes and Root Crops.—Late potatoes ought to be kept clean and the soil light. If, at the last working, a bushel each of salt and plaster mixed is sown over them it will pay for the labor and expense. Ruta Bagas, Mangels and Sugar Beets ought to be carefully thinned out and thoroughly worked. The same care is needed with Parsnips and Carrots.

Timothy.—A new impetus seems, of late, to be given to the old practice of sowing this grass by itself. Where this is to be done the land should be thoroughly prepared and the seeding done by the end of the month. To attain the best results very liberal treatment is needed. Timothy is a good feeder and needs plenty of manure. Deep plowing is an essential almost to success, and we think no crop would be more benefitted by subsoiling. Use the harrow and roller until a tilth is obtained. Nothing is more suitable in the way of manure than that from the stables and barn-yard, if it is to be obtained; but ashes, salt and bone are admirably adapted to this grass. A peck of seed is about an average for most soils, and great care ought to be used to distribute it evenly. Cross-seeding is a good expedient to secure this. A smoothing harrow or a brush is generally used to cover the seed.

Tobacco.—Will need to be worked until the interfering of the leaves prevent; and care must be used to overcome the worms. Topping is to be done as soon as the plants bloom, and great pains taken to destroy the suckers.

Making Manures and Composts Is a work in which the sun of August largely helps by aiding in the fermentation and breaking down of the ingredients. The collecting and composting of all decaying substances around the farms, the weeds from fence corners, scrapings of roads, waste from the dwelling, &c., will be profitable and seasonable work. Mixed with layers of good manure your pile will be greatly increased in value and bulk.

Top Dressing Grass Lands.—Well-rotted composts, or barn-yard manure, fine bone, ashes and salt, make excellent applications for pastures and grass lands, and if harrowed in, and, at the same time, seeds of timothy, orchard grass and red-top sown, the improvement will be long apparent.

Fences.—Look after these and see that there is no invitation to trespasses by your own stock or that of your neighbors.

Draining and Ditching may be done with advantage at this season.

Live Stock.—Provide tar and salt in the sheep troughs as a preventive against the fly. Give the cows some extra feed if the pastures grow short. You are fortunate, then, if you have been provident enough to sow corn for cutting. Keep horse stables darkened to spare them the annoyance of flies.

The Vegetable Garden.

Clear up the remains of crops that have been gathered, and fill out the spaces with late crops, such as cabbage, spinach or turnips. Give the weeds no opportunity to take possession of the land where crops have matured, since, as they seed, they will give you much trouble for years to come. Carry all litter and rubbish to the compost heap, and do not leave it to obstruct and disfigure the garden.

Beans, for late use or pickling, may still be planted, but the ground should be rich. Cucumbers for pickling ought to be sown at once. The first crop of celery will begin to need earthing up. Take care that the earth does not get into the hearts of the plants. See article on this sub-

ject on another page from Mr. Massey. Keep cabbage and cauliflowers well worked, and draw the earth around them. Lettuce for Fall use may be sown on good ground. Sow spinach in drills 20 inches apart. Sow turnips, and if they are attacked by the fly, scatter plaster, ashes or lime over the plants.

Live Stock.

Raising Live Stock at the South.

Mr. C. W. Howard, in the *Rural Carolinian* devotes some space to this subject, and from his admirable paper we make the following extract:

Formerly a serious attention was given to hog raising. It was the ambition of the planter to provide his own bacon, but rarely any for sale. He had a few sheep, and, under favorable circumstances, a considerable gang of cattle. But the sheep he rarely saw unless they were brought up to be salted, or the remnant of the flock ran home for protection against an incursion of the dogs. The sheep were sufficient in number to make him lose his temper when the dogs killed them, but not sufficient, either in yield of mutton or wool, to counterbalance the annoyance.

Cattle were turned out in Spring generally very poor, gaining flesh slowly, as the season advanced, saleable at low prices, as grass and beef in the Fall. If not sold the hope was to carry them through the Winter, without shelter, their only feed being straw and shucks, the supply of both being limited. No one can say that this is an exaggerated picture of the average cattle and sheep raising in the cotton States. There are of course exceptions. But how many of the planters who read these lines adopt a better system with regard to their sheep and cattle than the one described? Can this be called stock raising?

If a land-holder should put his cotton or corn in the ground, let them alone to find their own food, plant roots being able to travel and find their own victuals, plants having enemies as well, and then in Autumn return to pick the one and gather the other, would he be called a planter? Just as well as the man should be called a stock raiser who leaves his stock to shift for themselves. Under this treatment of crops we might well say that farming was a failure, as well as stock raising. Stock raising is a business and must be followed as a business. Not a sole and separate business, but as much so as the cotton, corn, and wheat, etc., on a plantation, requiring care as regularly, though not of as long daily continuance as the crops. Growing stock must be attended to, as well as growing plants. And, when grown, both must be prepared for market, if we expect to derive a profit from them. Corn in the shuck, or cotton in the seed, would be as little likely to find sale in a distant market as half fat cattle or sheep. Instead of preparing our stock for market in the Winter, they lose in the Winter what they have gained in the Summer and Autumn—it is a Penelope's web, lasting very often the natural life of the poor animal. When

he is in fair order in the Summer, he cannot be sold, for fresh meat is a drug. When he would bring a good price in market, he is too poor to eat or sell.

Besides the want of habitual attention, this offering of live stock for sale at the wrong season of the year, in consequence of their poverty in the Winter, is a material cause of the failure to make live stock remunerative at the South. There is nothing in the soil, climate, products, and at certain seasons of the year, markets of the South, to render live stock unprofitable. The difficulty is in their treatment by us and our having them partially ready for market at the wrong time.

Every Winter car loads, almost without number, of cattle, sheep, and hogs, are brought by rail from Kentucky and Tennessee. These animals are fed upon land often reaching two hundred dollars per acre. It is true that animals requiring corn to fatten them can be raised cheaper at the West than at the South. But it is also true (and the readers of the *Rural Carolinian* are requested to ponder this sentence) that animals which do not require corn to fatten them, as cattle and sheep, can be raised with increased economy and profit as we go Southward.

Every really thrifty farmer will raise his own colts, substituting oats for corn. While pork cannot be raised for sale at the South, it can be raised in sufficient quantity for home consumption. Wherever clover will grow, it requires, with the aid of peas, but little corn to fatten hogs. On this farm there are seven Berkshire shoats, weighing about one hundred pounds each, all of them fat enough for the knife, that have had no other food than that which they get in a clover lot of three-quarters of an acre, since the middle of April, and will receive no other food until October, when the pea field is open. There is scarcely a farm in the South where the soil has a clay foundation and is made sufficiently rich, where the same thing cannot be done. One acre of rich land in clover will keep in first-rate growing order ten hogs, that will make two hundred to two hundred and fifty pounds of pork each from the middle of April to the middle of October. This will supply the market for a large family. The hogs must not be put on the clover before it begins to blossom, nor after cold weather begins, as the roots become sweet, and they will destroy it. Sows with pigs, if put upon clover, must have some corn.

Where the soil is low and damp, it is unsuited for sheep. Dry, rolling sandy land makes the best pasture. Fall oats or rye make the cheapest Winter feed where the perennial grasses are not found. Where the object is to fatten mutton in February or March for market, the turnip or sweet potato, the former folded, the latter sliced with a root slicer, with hay or pea vines answers an excellent purpose. Turnips alone will not fatten sheep for the butcher, they will keep them in good order, but some dry food is necessary in addition; when a fat sheep is spoken of in this article, the word is used in the same sense as when we speak of a fat hog whose sides shake.

The perfection of a cattle farm would be a sufficient amount of cane, or swamp lands on which the natural Winter grasses grow, also

a sufficient amount of upland well set in Bermuda grass. The cattle penned every night on ground designed to provide Winter food for fattening them. Three-year old steers and heifers raised in this way, taken from the swamp in January, well sheltered and fed with turnips, potatoes, pea vines, straw or hay, would be ready for the butcher in March, and bring a handsome price. Under this treatment, the swamp or cane brake becomes a Chinchua island to the farmer who knows what to do with it. If money cannot be made by cattle raising upon a farm so situated, under judicious management, then it cannot be made by this branch of farming in any country.

Nothing is said of the dairy, because of the uncertainty of obtaining good and reliable milkers. If this desideratum could be steadily supplied, the dairy would be a source of great profit. In 1860, the butter crop of the State of New York sold for more money than the cotton crop of the State of Georgia, which was the largest ever made in that State. This is one of the departments of agriculture in which we must rely for aid on foreign skilled labor—small farmers owning their own lands, and managing the dairy within themselves and their families.

It must not be forgotten that in successful stock raising, the judicious management and husbandry of the manure is a vital point. Commercial fertilizers are in certain aspects a necessity. If the large cotton planter, could save one-half of his annual expenditures for fertilizers, by devoting a portion of his time to live stock, it would be a great gain to himself and his land.

A striking instance of the value of this kind of manuring is found on this farm. Reference is made to the crop of six acres of turnips, fed off by sheep, which was the subject of a statement by the Commissioner of Agriculture of Georgia, in the *Rural Carolinian* last Winter. The success of the experiment was entire. Enough of the turnips was sold to amount to upwards of two hundred dollars, and sufficient were left to feed a flock of Merino sheep, upwards of one hundred in number. The ground is now in cotton, corn, and one and one-quarter acre in onions. It is perfectly rich and clean, and the growing crops promise beautifully. The enrichment of those acres cost the writer nothing, in fact it was thrown in. They will be sowed with oats in September, and in February with clover on the oats. Afterwards a judicious rotation for a term of years will yield heavy crops without impoverishment or necessity of manure."

A Good Yield of Wool.

Messrs. Editors of the *American Farmer* :

I notice in the June number of the good old *American Farmer* that "ten yearlings" in a flock of sheep yielded 112½ lbs. of wool, but one of which, however, having a lamb. Since you join the writer in an invitation to others for their experience, I will give you a few facts in regard to my neighbor's flocks—much better than my own. Mr. W. W. Cobey clipped this season from his flock of 33 thoroughbred Cotswolds, 368 pounds of prime wool, an average of

over 11 pounds for the entire flock; about half the flock averaging 14 pounds. One ewe last year had three lambs, raised two of them, one of which sheared this season 17 pounds. Showing that twins or even triplets make good sheep.

Mr. Cobey had 30 ewes this season to bring 46 lambs; quite a prolific flock, as well as fine wool growers. To see such a flock of sheep when in full fleece, is really worth a trip from either Baltimore city or Montgomery county. So gentlemen come and see for yourselves.

Respectfully, &c., T. C. PRICE, M. D.
Charles Co., Md., July, 1st, 1875.

Sheep Raising in Virginia.

Major S. S. Bradford, the President of the Piedmont (Va.) Agricultural Society, in a recent visit to Albemarle, gave the editor of the *Jeffersonian* the following statement of his farm operations. After alluding to the damage done to his property by the U. S. Army during the war, which reduced it to a condition worse than it was in 1851, when he first entered upon it, he says:

"Now, however, his farm is in excellent condition, so that it is cultivated with good profits; his sheep having been the chief means of improvement. He owns eight hundred acres of land which he uses for a mixed husbandry. At this time he has upon it twenty head of horses, sixty head of cattle and three hundred and fifty sheep. From this flock of sheep he sold this year

2,750 lbs. of wool at 33½ cents.....	\$914.55
And sold 75 sheep at an average of \$4.....	300.00
	<hr/> \$1,214.55

And this is a fair annual average from his sheep. Besides this, he usually raises about four hundred barrels of corn, every grain of which he feeds at home, and makes from one thousand to twelve hundred bushels of wheat. This will give some idea of the profits that can be realized from sheep, without materially interfering with the production of other farm products. Every year he puts on his farm forty thousand bushels of good farm pen and stable manure, most of which has never been exposed to the weather."

The Poultry Yard.

Sulphur for Fowls.

There is no remedy and assistant so easily and cheaply obtained, so harmless to the fowls, or so satisfactory in its result, as sulphur. It being in the system of animals to a small degree, there is a greater affinity for it than there otherwise would be. It can be administered to the fowls by having it in a small box, so that they can help themselves, or by mixing it with their feed once a week, or as often as there are indications of vermin. Penetrating, as it does, to every part of the system, the parasites are quickly and surely destroyed. Also gapes are said to be prevented in chickens. Fowls need it more than most

animals, their feathers containing between four and five per cent. of sulphur. Their eggs also have a small quantity, which is noticed by the discoloring of a silver spoon when it comes in contact with a boiled egg. Applied externally to the fowls when on the nest, to the nest itself, or mixed with the soil in the dusting box, it is equally efficacious in destroying vermin. To be used as a fumigator of buildings, it is necessary to remove the fowls, close the room or house, mix a little saltpetre with the sulphur, in an iron vessel, and apply a match to the mixture. This should be done in the morning, and the doors and windows opened in the afternoon for a thorough ventilation. Lard mixed with sulphur in proper proportions and applied as often as it is necessary to the feathers or the neck and back of young and old turkeys is a very good safeguard against the ravages of foxes.—*Poultry World*.

Gapes in Chickens.

From thirty-five years' experience, I have come to the conclusion that gapes in chickens are produced by eggs deposited on the ground where dirty water or suds is thrown out and lies some time without drying. The chickens eat it, and some of it lodges on the roof of the tongue, and hatches and goes down into the windpipe, producing red worms, which grow until they kill the chicken. My remedy is to get a head of blue grass (best when young), take off the seed, turn the end down, and twist to make it lie close together; hold the chicken's feet between the knees; take the bill and tongue in one hand, put the blue grass down as low as you can, without pressing it, with the other hand giving it a twist and withdraw it quickly; then let them snuffle. When the blue grass is older, it requires more care. Sometimes blowing in a chicken's mouth saves its life. I generally can save them when they are too weak to travel around. Feeding young chickens with corn, as large as they can swallow, is very good.—*Cor. Country Gentleman*.

Lice on Fowls.

Nearly all the mortality among young chickens is caused by lice. The long period of incubation required is aggravated by using nests for sitting which have been constantly employed during the early season by laying hens. If these nests are under ground, or in close filthy houses, lice are almost inevitable. Sulphur or carbolic powder are the best preventives. Before setting a hen, clean the nest carefully, sprinkle it with sulphur, and dust some occasionally over the hen when setting. A correspondent of the *Pacific Rural Press* recommends an ointment made as follows for young chicks:—Mercurial ointment and lard, each one ounce; one and a half ounces each of flour of sulphur and crude petroleum. This is to be mixed and applied very sparingly along the back of the neck and head and a little under the throat, as it is here that lice are first found, probably from the chick nestling its head among the feathers of its mother. One light application will be sufficient for five or six weeks. At the end of that time anoint again. Care should be taken to use this ointment very sparingly, as a large quantity might result fatally to tender birds.

The Apiary.

BEE VEILS.—A writer says that every one—no matter who, whether he leads what is called a charmed life or not—requires the person protected while at work among his bees. To those who are commencing, and until familiarity causes the loss of fear, a pair of good gauntlet gloves and a veil are necessary, but after the fear and trembling occasioned by the thought of opening a hive full of bees has ceased to have its horrors, all protection except the veil will be dispensed with. A good bee veil is made by taking a yard of black netting—costing usually about twenty cents—and sewing the ends together, thus making a bag, open at top and bottom. Then with a half yard of good strong rubber cord, run through the meshes at the ends, and you have a veil which will slip on over the crown of an old hat, and by drawing up and tying at the neck, you have all the protection required, for, if properly made and adjusted, no bee can touch your face or neck, consequently there can be no fear of stings, and besides it is light; one can see through it nearly as well as if not worn.

USES OF WOOL IN THE APIARY.—For the last four years we have used wool quite largely for various purposes in our apiary. We use nothing else for stopping up our queen cages, rolling it for this purpose into a tight wad. The bees cannot gnaw it away, and seldom propolise it. We shut up all our nuclei, when first formed, with wool. It can be crowded into place in a moment, admits air, and is easily removed. If we wish for any purpose to shut up a hive, we use wool. In the working season, we keep one "pocket full of wool," and know nothing of the vexations we experienced when using wire-cloth. Occasionally a few bees are caught in the fibres of the wool, but they are for the most part very shy of it, and are quite indisposed to commit *felo de se*, by hanging themselves in its meshes. Robbers will very quickly retreat from a hive well woolled. If we use the words *to wool* and *unwool* a hive or nucleus, instead of to shut up or open the entrance, our readers will understand what we mean.—*L. L. Langstroth in Practical Farmer.*

Depth of Soil and Drought.

It is one of David Dickson's maxims that crops resist drought in proportion to the depth of the soil. He says: A cotton plant to stand two weeks drought, must have four inches soil and six inches sub-soil; three weeks—six inches soil and same sub-soil; four weeks—eight inches and the same sub-soiling. Plough cotton, he adds, every three weeks and let the hoes come ten days behind, cleaning it perfectly. Continue ploughing cotton till the 15th or 20th of August. Once or twice during the season, shove out the middle with a furrow, to keep the land level. The ploughing of cotton requires one and a fourth days per acre.

MR. WILLIAM HORNE, V. S., says in the *Country Gentleman* that in thirty years' practice as a veterinary surgeon he never has found a single instance where any disease in a horse could be traced to bots as a cause.

The Dairy.

Scalding Milk for Butter-Making.

Mr. O. S. Bliss, the Secretary of the Vermont Dairyman's Association, kindly sends us its Transactions for the year ending October 27th, 1875, a volume of very great interest. From the report of the annual meeting held at Montpelier in October, 1874, we give the following on the topic named above:

Mr. Safford, of Quechee, inquired if scalding milk in summer had been tried for making butter, instead of cooling it, and with what success? He said he was using the large cooler pans, but he was not satisfied with the results. It is too expensive in most cases to cool the milk in the patent pans, nor did he believe the butter as good as that gained from the old-fashioned small pan setting.

The inquiry was responded to by A. W. Cheever, of the *New England Farmer*, who stated that experiments had been made the past summer in heating milk as soon as brought from the stables, to a temperature of 140° Fahrenheit, and then letting it remain in the milk-room at the ordinary summer temperature for twenty-four or thirty-six hours, and that the experiments had proved successful.

Mr. Arnold coming in at this point, the question was referred to him. He said that when the milk is perfectly sound and right, and the dairy-house perfect, and the milk perfectly set, all the butter can be gained from the milk without special treatment. There is a mania for cooling milk, and the cooling is often improperly done. It should not be cooled too fast, but gradually, so that the animal odor can have time to escape. The patent cans cool too quickly, and there is the fault. It should not be cooled down to 60° in two hours. Twelve hours would be better. He had seen several specimens of butter made from milk which had been cooled rapidly, and it was poor. It cannot keep well when made from milk that is cooled rapidly. Let the milk cool gradually, and there will be no trouble. He had first suggested heating the milk in summer, believing the effect would be better than the injudicious cooling so very prevalent. The object of heating is to kill the organic germs which get into the milk from impure water, bad feed, or by exposing cows to the hot sun of July and August. These germs, unless destroyed, seize upon the cream and destroy or seriously injure it. Cream rises faster on milk kept at a high, than on that kept at a low temperature, but the butter will be a little softer and have a little less flavor, because the light butter oils are in part volatilized by the heat. He related an instance coming within his knowledge, where a large vat of milk was scalded and then allowed to remain twenty-four hours, and at the end of that time, the temperature being 90°, it was perfectly sweet. The vat was twelve or fourteen inches deep. Heating sound milk is superfluous, and the flavor of the grasses is driven off to some extent.

Mr. Hawley, also, thought the cooling process had been overdone, especially in small dairies.

Mr. J. T. Ellsworth, of Barre, Mass., a butter-maker of fine reputation, stated that he had practiced heating milk. He placed the milk all together in a large pan directly after milking, and heated to 130°. His apparatus for heating is as follows: A large square galvanized iron pan sets upon the stove, and inside this there is a large tin pan into which the milk is poured. The tin pan sets in water just as the inner vat sets in the water in a cheese-vat. Thus the heating is done in a water bath. When the milk is put in he strengthens up the fire and holds a thermometer in the milk. It heats up rapidly, sometimes in three or four minutes. He would rather heat than not heat before setting, so far as the labor is concerned. After heating, the milk is set 36 hours, and cools down naturally. He finds no difference in the butter, whether it cools down to 70° or 50°. Mr. Ellsworth is anxious to know how heating in summer will operate, and will try it next summer. He has tried an artificial summer temperature by heating up his milk-room to eighty degrees, and the result was good. But perhaps the milk was not in its usual summer condition.

Devon Cattle for the Dairy.

From the same volume we give the remarks made by Gov. Hyde, of Connecticut, on Devons, as cattle for the Dairy:

He said that Devon stock had been looked upon as not being dairy stock, being too small. He believed they were harder than other breeds and better workers. As beef they were good, being in higher esteem than any other at Smithfield market. He wasn't certain that he should keep Devons on the strong alluvial soils. He didn't believe there was one-quarter of the New England territory that could sustain Short Horns. On his own soil even Ayrshires didn't do as well as Devon; they gave no more milk than the Devons and were fully twenty-five per cent. poorer in butter. However, after they were sold and placed in a strange soil the Ayrshires did better. He said that few breeders of Devons were high feeders, while the owners of Ayrshires were almost uniformly so. He was really curious to see the various breeds of cattle compared from the same standpoint. He was asked by the secretary of this society if he would consent to such a trial and had offered to give three cattle for such experiment. He related a similar experiment on the part of the Massachusetts Agricultural College, which, however, had reached no definite result as to the Devons. But the Hampshire County Agricultural Society had reported strongly in favor of one of his Devon cows named Gem. In England some years since Mr. Bloomfield proposed to milk forty cows of Devon breed against forty cows of any other breed owned by any one and found no competitors. He himself believed strongly in the Devon breed as dairy cows. One of his cows, Gem, 154, made one hundred and thirty-six and one-sixteenth pounds of butter in sixty days. Her feed during this time was two quarts of corn meal and the ordinary

pasture. He adduced several other instances of remarkable butter produced by Devon cows, among others Beauty 25, which in ninety-five days from August to October made one hundred and ninety-four and fifteen-sixteenths pounds of butter. Devon cows certainly had a rotundity of form and beauty not possessed by any other breed. When put upon the scales they were disappointed in the right direction. A neighbor of his, William Mattoon, had a bull thirty-six months old which weighed two thousand two hundred and twenty pounds. He was a good feeder with cooked food, an exception among the owners of Devon stock. He knew of a Devon breeder who could produce a pound of butter for five quarts of milk.

Meeting of Executive Committee of the National Grange—Co-operation and International Exchanges.

The Executive Committee of the National Grange held a meeting last month in Washington, D. C., and adopted the report of the sub-Committee, to whom had been referred the subject of international exchange between the co-operative societies of Great Britain and the Patrons of Husbandry of the United States. The report is as follows:

1. That they have been impressed with the earnest desire of our subordinate grangers and members of every section of the Union, for active co-operation in business enterprises, as expressed by efforts in this direction and by appeals to this Executive Committee for a systematic and uniform plan for such organizations, and with our obligations to mature and submit such a plan for adoption.

2. That we would willingly and cordially grasp the hand offered to us by our brethren across the Atlantic, and pledge to them our readiness to co-operate with them in all laudable efforts to secure for productive industry its just reward, to restore honest dealings in all commercial transactions, and to advance the moral, intellectual and material interests of the masses of the people.

3. That having examined the details of the plan of the co-operative Society of Great Britain as presented by their deputation to us, popularly known as the "Rockdale Plan," and its wonderful success, we heartily recommend it to the careful consideration of our State and subordinate Granges, and to the members of our order, and advise such action on the part of the Executive Committee of the several States as may be necessary to the organization and operation of such co-operate associations within our order.

4. To this end we recommend the appointment of a committee to secure from the Hon. Thomas D. Worrall, of the English deputation now present, such rules, regulations, articles of association, pamphlets, and other writings as may be deemed necessary to place the desired information in this connection before the members of our order, and that said committee be authorized to have printed so much of said information, and in such amount, as they may deem advisable, to be distributed to the Executive Committees of the State Granges, with circular letters communicating the action of this Executive Committee herein, and such other instructions as may be desired.

The Executive Committee of the National Grange also determined to send three of their number to represent the patrons of husbandry in the cotton States' Congress, which met in Raleigh, North Carolina, on the 13th ult.

The Executive Committee of the National Grange spent considerable time in receiving and considering the proposition of the English co-operatives for the union for commercial purposes of the two companies. The co-operatives are represented by Hon. D. Worrall, of Manchester, England, who is managing director of the company which is proposed as the bond of union. It appears that the British co-operative societies are not a secret body, hence it will be impossible, under the existing circumstances, to unite with the patrons, but this difficulty has been met by the formation of a trading company, having the endorsement and support of the united co-operative body, and the two bodies will form a council, who will, by joint action, decide what branches of business will be engaged, and define the method of conducting the same. An American will be sent to Livingston to watch the interests of the Grange branch of the company, and the English Board will have a like representative in New Orleans, while the general supervision will be in the hands of a managing director, already elected, who, though an Englishman by birth, has been 23 years in America. The proposition is regarded with great favor, and it is seen that the sub-committee of the National Grange, to which the whole matter is referred, reported as above, and their report was accepted as noted above.

The co-operative societies of England are organized under the English laws. The propositions are to have two branches of the society—one in England and the other in the United States. The board in each country is to have the absolute control of the funds subscribed therein, and all to be used for the purpose of international exchange of commodities. The capital is \$25,000,000. All transactions are to be for cash or its equivalent. The British co-operators number 500,000 members, have over one thousand stores, some fifty or sixty cotton spinning mills, about twenty flouring mills, an agricultural and horticultural society, and a number of manufactories. The funds to be subscribed by the English branch of the company will be employed in the purchase of ships, the erection of warehouses and the manufacture of such articles as are in constant demand among the patrons of husbandry. These ships will bring the goods to New Orleans and other Southern ports, and to Eastern ports if necessary, and they desire the patrons to employ their portion of the capital in conveying American staples and products to meet these ships, and thus make the necessary exchange in the most direct and simple manner. The co-operators have a large surplus capital which is constantly on the increase, and which they think can be profitably employed in trade, while each branch of them will have control of its own affairs.

THE OFFICES OF THE NATIONAL GRANGE were closed at Washington on the 17th ultimo, preparatory to removal to Louisville, Ky., to place communications for the Secretary must hereafter be addressed.

The Cotton States Congress.

This body met at Raleigh, N. C., on the 13th ultimo and continued in session three days. About fifty delegates were present from Georgia, North Carolina, South Carolina, Tennessee, Arkansas and Louisiana, and including a representation from the National Grange.

Col. D. E. Butler, President of the Congress, delivered an address setting forth the causes which called the Congress into existence. He stated that the system of mortgaging crops before they were made had well-nigh bankrupted Georgia, and that the Legislature refused to re-enact that law last Winter. Starvation seemed to stare people in the face on account of this refusal. But they had got along somehow, and their prospects for a full crop were never better, and people would be more prosperous and independent hereafter, the mortgaging system having been abolished.

Judge Jones, of Arkansas, addressed the Congress on the subject of establishing official bureaus in the several States. He read a telegram from the agent at New Orleans of the Rockdale Co-operative Company of England, asking a committee of conference, and Messrs. Maxwell, of Tennessee; Jones, of Arkansas; Jones, of Georgia, and Butler, of Georgia, were made said committee, and the subject was referred to the National Grange.

Col. Holt, of North Carolina, introduced a resolution requesting the delegates to this Congress to urge the Legislatures of their respective States to follow the precedent so wisely established by Georgia in establishing a State department of agriculture.

Dr. Jones, of Georgia, spoke at some length in advocacy of the resolution, and explained the great good that had been accomplished in that State by this department. He claimed that \$2,000,000 would be saved to the farmers of Georgia this year by its workings. The resolution was adopted.

The affairs of the Direct Trade Union were discussed, and it was stated that while its workings had not been altogether satisfactory, it had established the fact that it could be productive of great good to the Southern States.

An essay was read from Dr. E. M. Pendleton, of Georgia, pertaining to agricultural colleges and departments of agriculture.

Col. Johnson, of North Carolina, reported from the Special Committee, advocating the re-establishment of State banking systems as peculiarly advantageous to the whole country, and asking Congress to relieve the tax upon State banks as a matter of justice and right.

A constitution and by-laws were adopted, making the election of officers biennial. Col. D. E. Butler, of Georgia, was re-elected President; Col. J. D. Whiteford, of North Carolina, Secretary; R. M. Sims, of South Carolina, Treasurer.

Nashville was selected as the next place of meeting.

A resolution was adopted urging the importance and absolute propriety of producing an abundance of all articles of prime necessity.

The Committee of Proper Basis to unite the commercial interests of the Southern and Western States, said these States should be

more closely united together, as the strongest ties of commercial interests existed by reason of their diversity of climate and soil, each producing the prime articles of domestic necessity required by the other.

A resolution was adopted requesting Congress to afford such aid as will insure the construction of three great trunk lines of railway from Chicago to Morristown, Tennessee; from St. Louis, through Cumberland Gap to Knoxville, and from Memphis to or near Atlanta, Georgia.

By appointment of the last Congress, Col. J. L. Bridgers delivered an address on the general subject of agriculture in the Southern States. There must be a change of agriculture in these States. Population and prosperity were diminishing in quantity and quality. The loss in production from 1860 to 1870 had been enormous, while the loss in the area of cultivated land was over seven million acres. He opposed the cutting up of land into small farms as tending to reduce all farming to the forty acre and the mule system. The South could save a hundred million dollars in feeding horses on oats and clover, instead of corn and fodder. His speech was full of facts and practical suggestions, and was listened to with great attention.

GOOD CROPS OF WHEAT.—The yield of wheat in the Eastern Shore counties of Maryland seems to have been very good. The *Kent News* reports that Col. Edward Wilkins' crop, the first one, by the way, that he had sown for eighteen years, averaged 84 bushels to the acre. The variety was the Fultz, and no fertilizer was used.

The *St. Michael's (Talbot Co.) Comet and Advertiser* reports that the crop there is yielding remarkably well, Mr. Edward Willey having a field which gave 45 bushels to the acre. A new variety of bearded wheat, "Jennings' white," it says promises well, and the general testimony as to the present wheat crop is that fertilizers have paid, though there are a few exceptions to this.

MR. JOHN B. BROWN, of Centreville, Queen Anne's co., Md., for six bushels sown, harvested ninety-six bushels of good marketable wheat.

One of our dailies, the *Sun*, records the sale of a lot of 185 bushels of Fultz wheat raised by Mr. Lewis E. Way, near Baltimore, from three bushels sown on less than three acres of land. This is an extraordinary yield.

The same paper says: **Mr. George B. Graves**, in Patapsco Neck, Baltimore county, adjoining the lands of James L. Sutton, Charles E. Lynch and Col. William Kimmel, raised this year on twenty-one acres, sown with 23½ bushels of wheat, 1,035 bushels, or 49½ bushels per acre.

We call attention to our Agency Advertisement, given elsewhere. We should be glad to serve our friends in any way in which we can be useful to them.

PERUVIAN GUANO REDUCED IN PRICE.—The Peruvian agents in this country have been authorised to sell guano at a reduced price from what has been asked for years past. The circular issued by the agents puts the price at \$60 currency per ton of 2,240 lbs., instead of gold as formerly; this price is for any quantity between 10 and 25 tons; with a sliding scale for larger quantities up to 1,000 tons and upwards, which reduces the price to \$55 currency. The guarantee is promised of 10 per cent. or more ammonia.

Formerly, the Chincha Island guano averaged from 15 to 18 per cent.—the Guanape Islands less than that; but no guarantee was given in either case. A new island has been entered upon, which it is computed will yield 800,000 tons, two or more cargoes of which we hear have been received at this port. We learn from a dealer, that some of the new deposit guano will not yield more than 6 per cent. of ammonia, consequently purchasers must be on the alert to secure the full percentage guaranteed. Even at the present rates, the reduction in price is overbalanced by the decreased intrinsic value of the article.

Improved Stock in North Carolina.

Mr. James Norwood, of Hillsboro, N. C., writes as follows to *The State Agricultural Journal* of Raleigh, N. C., which has commenced a new volume, much improved, under the new control of Col. J. D. Whitford, on the subject of improved stock in North Carolina:

"There is nothing more needed in our State or more profitable. But you must first start with grass, and they will aid each other; indeed, one is dependent upon the other, as you cannot raise the stock without the grass, and on the majority of our lands, grass without the animal manure. I am succeeding admirably with both, each year extending my operations. Well bred stock pays handsomely. I have always bought from the first breeders in the country, through agents, who were familiar with the business. My Cotswolds and South Down Sheep, bought for me by Sands & Son, of the *American Farmer*, Baltimore, are bred direct from imported animals. I find no difficulty in selling all of my lambs at \$10 to \$25 each, at 6 months old, for rearing purposes.

My yearlings clipped an average of 6 pounds wool, I sold in Baltimore at 56 cts., the highest quotation, showing that my wool stands No. 1. My old Cotswold Buck clipped 11½ lbs. (clean); he cost \$57; South Down Buck, \$50; Ewes, \$35 each.

There are, though, uncommon sheep. The grand sire of the South Down was imported at a cost of 260 guineas.

My Berkshires are from the celebrated Patterson farm, Maryland, also bought by Sands & Son. Pigs at 8 weeks sell readily at \$20 per pair."

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Transient Advertisements payable in advance—all others quarterly.

Advertisements should reach us by the 20th of the month, to secure insertion in the succeeding issue.

AUGUST 1, 1875.

It is with a good deal of pleasure we present to our readers the article on Irrigation, by Mr. Faul, the accomplished Engineer and General Superintendent of Druid Hill Park, near this city. It was at first intended as an answer to some inquiries on the subject from a gentleman in Virginia, a friend of Mr. B. H. Latrobe, the eminent civil engineer, but Mr. Latrobe thought so valuable a paper ought to have a wider perusal, and suggested its contribution to the pages of the *American Farmer*.

The subject is one coming every year nearer home to our agriculturists, whose crops are so affected by the droughts of our uncertain seasons. Those interested will note the very generous offer of the author to answer any questions on the subject which he may receive. As Mr. Faul is charged with the administration of very important duties, we would suggest that any of our readers desiring information should address him through our columns, as his responses may then meet many cases of similar conditions, and save him the labor of a private correspondence.

New Peaches.

By the thoughtfulness of Col. Wilkins, we received on the 23d ultimo a box of specimens of Mr. Rivers' new peaches—the Early Beatrice, Early Louise and Early Rivers. The first is of medium size, mottled red, and is not so large and perhaps not so good in quality as the Louise, which is a fine-flavored, juicy fruit. The Rivers was hardly ripe enough to show its character. It is a white peach with a blush on the cheek, and of good size.

The Agricultural College.

A meeting of the Board of Trustees was held on the 15th ultimo, at which all the members were present except Gov. Groome.

The expected reorganization of the faculty was consummated so far as to select a president and to give him authority to appoint, subject to the approval of the Board, all the other professors and tutors.

Our readers will learn with surprise, we think, that the new president is Captain Wm. H. Parker, who occupied "the new chair" of nautical science under the late government of the college, and who, the *Sun* of this city says, "was formerly in the U. S. Navy, afterwards in the employ of the Pacific Mail Steamship Company, and lately an instructor of boys for entrance into the Naval Academy at Annapolis."

After the adjournment of the Board on the 1st ultimo, as noticed in our last issue, without agreeing upon any plan for the financial relief of the college or upon a suitable corps of instructors, one of the members of the Executive Committee informed us that the Board had virtually decided to give the appointment of the president to Prof. M. A. Newell, one of the representatives of the State in the Board,—he being then in correspondence with a gentleman whom he assured his colleagues was of such a character that the whole direction of the college could be safely left to his discretion.

Prof. Newell is a man not only of distinguished ability and solid attainments, but he is noted for the possession of eminent practical wisdom, and for his sound judgment of men. To this happy combination he doubtless owes the success which has attended his administration of the public school system in this State, of which he is the real head.

We confess therefore to the greater surprise at the choice made, for we can but think that it is a signal mistake, one which cannot now be retrieved. The newly elected president is perhaps a man of learning, an efficient disciplinarian, an amiable gentleman and a skillful navigator. He may have gained credit and distinction in the U. S. Navy, and have maintained a high reputation in serving that other navy in whose service many other reputations were shipwrecked—the Pacific Mail. He may also be a good instructor; we have heard, indeed, that he is, in mathematics. Yet his appointment here is just as erratic as though a plain, substantial, successful farmer had been assigned (if such a thing were possible) to the superintendency of the Naval Academy at

Annapolis. We do not know the gentleman named, and bear him no prejudice, but in our opinion his selection is unwise and wrong, no matter how capable he may be in his profession.

An *agricultural* college with a *sea captain* in charge of it is anomalous and incongruous, viewed in any light. Aside from this, the connection of Captain Parker with the recent wretched failure in the conduct of the college, and its decline in attendance, scholarship and discipline; his part in the scheme of a Nautical School, so justly liable to ridicule, even considered as an expedient to bring money to the coffers of the college; his affiliation with one of the factions into which the late faculty was divided, ought to have pointed to his unsuitableness.

Whether his reappointment carries with it that of any other of the former incumbents, or a continuance of the school for "coaching" candidates for midshipmen at Annapolis, we are, of course, not in a position to say; but, whoever may be his associates, this step puts a period to progress in the cause of Agricultural Education in Maryland.

In our belief the trustees have not risen to a just appreciation of the necessities of the case. The task set before them was, we know, a difficult one; but one more important to our State was scarcely ever confided to a body of her patriotic citizens. Our agriculture is depressed, despondent. Nothing would do more to raise it from its present prostration than an institution from which not only would a good example go forth, but each year a large class of young men so trained that they would return to their farms, well educated, qualified for the duties awaiting them, and with enthusiasm for them. The situation, the times, demand it.

It will not do to answer that this is impracticable. Look at Michigan, Georgia and Massachusetts. What has Prof. Pendleton saved to the State of Georgia in the last three years? The reports of Prof. Goessman are declared to be intrinsically worth more to Massachusetts than the whole amount heretofore expended on her agricultural college. Prof. Miles has done a work at Lansing which will show itself long after his removal to another field.

If our college could not command the services at its head of a Goessman, a Miles or a Pendleton, it might, at least, have had there a man in whom the farmers of our State had confidence—one who has been identified, or who could identify himself, with the agricultural class.

There are men in our State, as well as others in neighboring ones, farmers,—practical but intelligent and scientific farmers,—who, with the full

authority given this new appointee to set the college in order, knowing its needs, and with faith and zeal, could very soon have presented it "clothed and in its right mind," and not much later have made it a success in its finances, its example, its work.

Does any one believe the newly instituted *régime* can accomplish this?

From the reports in the daily press it appears that the funding of the debt of the college was not effected. It was expected that this would be done as a matter of convenience, to avoid pressure from creditors, and it was properly urged by some of the Board that it should be done before any other steps were matured. The Board resolved to set aside the State appropriation of \$3,000, receivable in the ordinary course in February next, to be applied to the reduction of the debt. This sum seems, however, from the terms of the charter, to be specially granted for the payment of the salaries of professors, and as the Legislature meets before it is payable it may not be continued. In the meantime some of the creditors, we are informed, have instituted legal proceedings to recover the amounts due them.

There is, then, little in the condition of the college that points to its rendering any efficient service to the agricultural interests of our State. If her farmers, or any other of her citizens who wish to make farmers of their sons, see, in this "reorganization," any hope of practical agriculture being made the "prominent feature of the institution," or of its rising from the clog of its debt and its past reputation to a career of usefulness and honor, and therefore choose to commit their sons to its charge, they are more credulous than we take them to be. For ourselves, this last move extinguishes any hope we had of the institution.

A number of advertisements will be found in this issue of improved stock for sale. Mr. Lea, of Brighton, Md., offers Berkshire pigs, which we know from a personal inspection are good ones. Messrs. Cobey, Carroll, Dows and Jenkins, offer sheep of the various breeds. Selections made from any of their flocks cannot, we think, but give satisfaction.

A NEW FIRM.—Messrs. Cromwell & Congdon, the successors of the old established house of Richard Cromwell, offer in this month's *Farmer*, in a well-displayed advertisement, their specialties in Agricultural Implements, Seeds for the Farm and Garden, and Fruit and Ornamental Trees, &c., from their Patapsco Nurseries.

FERTILIZER ADVERTISEMENTS.—These will be found numerous in this number in anticipation of fall seeding. With few exceptions all the well-known brands in this market are represented in our pages.

Our thanks are due Mr. Carter, of the East Penna. Experimental Farm, for his contribution. The work done at that institution is eminently practical, useful and suggestive. It shows too what may be accomplished for the direct information of working farmers under the disadvantages of a lack of money, insufficient equipment and neglect by the State.

What could not our State *Agricultural* Institution, with its handsome income and a man like Mr. Carter in charge, accomplish for the farmers of our State?

What has it yet done for the farmers of Maryland?

What can be expected of it, if its future, as seems now likely, is to be only a repetition of the history of its past?

THE AMERICAN FRUIT CULTURIST.—We have received from Messrs. Wm. Wood & Co., New York, through their agent in Baltimore, *Mr. J. A. C. Jerningham*, No. 4 South Gay St., a copy of a new edition of this valuable work, which is now a standard authority on the cultivation of all varieties of fruits grown in this country, from the pen and pencil of the veteran horticulturist, John J. Thomas.

This edition contains a great number of engravings, and has been thoroughly revised to include all the latest information and developments in fruit culture, and the long experience of its distinguished author makes it reliable as a work of constant reference. It is also beautifully gotten up and will be an ornament to any centre table. This edition is sold by subscription, and on receipt of the price, \$4.50, Mr. Jerningham will send a copy by mail, to any address.

Our "Eastern Shore" correspondent asks the price of peas and where they can be had. The past season they were scarcely to be found at all in this market; but ordinarily they can be had through most of the produce commission houses. The *black* peas ranged this summer from \$1.50 to \$2.25, and the *black-eyed* and *cow* pea from \$1.50 to \$2.00 $\frac{1}{2}$ bushel.

The Annual Address at the Maryland State Society's Show at Pimlico will this year be delivered by the Hon. G. C. Walker, ex-Governor of Virginia.

SCRIBNER'S MONTHLY for August, besides a great many other interesting articles, contains another number of Col. Waring's "Farmer's Vacation," giving a charming account of the Island of Jersey and some exceedingly interesting details of the cattle which take their name from it, their history, breeding, treatment, &c.

DEATH OF LEXINGTON.—The thorough-bred stallion Lexington, by Boston, out of Alice Carneal, died last week at the farm of his owner, A. J. Alexander, of Ky. The time by this famous horse, four miles in 7.19 $\frac{1}{2}$, stood unequalled until last summer. He has long been blind, but proved one of the most successful sires of winning horses in the country.

We have received the catalogue of Bethel Academy, for boys, near Warrenton, Va., an advertisement of which will be seen elsewhere in this No. From the testimonials given, some from gentlemen whom we know, this seems to be a well-conducted school—while the terms are very moderate.

A NEW HARROW AND CULTIVATOR.—Capt. L. H. McGinnis, who invented the Lime-Spreader bearing his name, which is, we believe, the most perfect machine of its kind yet made, has now patented a Harrow and Cultivator of novel construction, which he thinks surpasses anything yet offered for the purposes of such an implement. An advertisement of it will be found in this No., and we recommend all interested to send for descriptive circulars.

The Peach Louse and its Increase.

In our remarks elsewhere in this number on the noticeably diminished numbers of the peach aphids this season as compared with last, we said that this fact was regarded by Col. Wilkins as confirming his belief in the periodicity of their appearance. We ought to have added that he thinks it is to this periodic mutation of the insect that we owe our escape from the sudden and entire destruction of our trees, as when this mutation, necessary for their perpetuation, is passed, not one in a million of the generation above ground reaches its natural home on the roots, to live out this part of the cycle of their lives. A very small number doing so must in a short time accomplish the destruction of our trees, as the best authorities assure us, that in five generations a single insect may have offspring numbering *fifty-nine hundred millions*, and that there are twenty generations in a single year. This carried on for three to five years whilst under the ground, will furnish enough to produce wide-spread disease and death among our trees.

Professor Herbert's Analysis of Soils.

We have been furnished, by Prof. A. Herbert, of Washington College, Chestertown, Md., with a tabulated statement of the results of a trial of his "chemical agricultural powders" for the analysis of soils upon a series of plots of land sown in wheat on the farm of Mr. Thos. P. Dixon. The experiment demonstrated very satisfactorily the usefulness of the powders applied. For instance, on the plot where there was nothing added to the natural soil the product of grain was at the rate of 16 bushels to the acre, but where the complete plant food was applied the yield was 40½ bushels to the acre. Where the acid phosphate of lime was left out the yield was 18 bushels. Where potash was omitted it was 30½ bushels. An anomaly seems to exist, however, in the case of the omission of sulphate of iron, when the product was 45 bushels.

Where ammonia was deficient the reduction was not so great as might have been reasonably expected. This the professor accounts for by the fact that nitrate instead of silicate of potash was used in his preparations, and this furnished some nitrogen to the crops.

There were eleven plots; one had nothing added, one received the complete plant food, and on each of the others the powder added was deficient in one ingredient. The yields in this instance plainly demonstrated the deficiency in the soil of potash and phosphoric acid, and that sulphate of lime and sulphate of iron were not required.

Oleomargarine Cheese.

The *New York Grocer* very strongly condemns, against so high an authority on dairying as Mr. X. A. Willard, the new process of making cheese, by which, in the place of the cream taken from the milk, melted oleomargarine or animal fat is added; and insists that unless it goes upon the market with its true name and upon its own merits—which it has not heretofore done—that it will bring the entire dairy production of cheese into disrepute, and work an immense damage and loss to our trade abroad. The presence of the adulterated cheese in the English markets is already being felt here, and the policy of the adoption of the plan is suicidal to our immense dairy export interest.

HOWARD COUNTY GRANGE.—Master, H. O. Devries; overseer, A. Chadwick; lecturer, J. D. Warfield; treasurer, Dr. J. C. Williams; chaplain, Joseph Barlow; steward, Dr. H. Hebb; assistant steward, Dr. W. C. Watkins; gate keeper, Gillis Owings; Ceres, Mrs. H. O. Devries; Flora, Mrs. G. W. Linthicum; Pomona, Mrs. Baseman; lady assistant steward, Mrs. Jean.

The Potato Beetle.

Much surprise seems to exist at the sudden diminution in some quarters of these insects, and it has been attributed to various causes. Prof. Uhler has been good enough to call upon us to say that an enemy of the beetle common in the West is here in considerable force, especially in Montgomery co. It is the *Lebia grandis* (Hentz.), a beetle with purple wing-covers and yellow head and thorax, which destroys the larvæ and eggs of the potato beetle. A new species, *Lebia atriventris* (Say,) has also made its appearance. We hope their good work will go on uninterrupted.

Grapes and Graperies.

Our friend, Major Allison, of Baltimore Co., as an evidence of the promise of his grape crop this season, showed us some of the thinnings out of his Perkins grapes, the green bunches weighing seven ounces. The Major, by the way, has in use just such a combined graperies and henery as described and illustrated elsewhere in this number.

REMARKABLE VEGETABLE GROWTH.—Capt. Chas. H. Snow, of Harford, tells us that a plant of *Amorphophallus campanulatus*, a singular specimen of the Aroidæ, a tuber of which he lately planted, grew thirty inches in eight days. The growth of this plant is very singular. It pushes up a curiously mottled blunt shoot, not unlike an exaggerated Asparagus stalk, and then at the height of from 12 to 30 inches throws out an umbrella-shaped head. The variety *A. Rivieri* is now becoming common, and is scarcely to be distinguished from the one named above.

LOTTERY AND QUACK MEDICINE ADVERTISEMENTS.—Parties interested will please take notice that these advertisements are not inserted in this journal. All such that we receive, and they are numerous, are thrown at once into the waste basket. We decline those of lotteries not only on the score of good morals, but also that their publication is contrary to the laws of this State, and would render us liable to a heavy fine.

A GOOD TEXT.—Hon. John Carroll Walsh, of Harford, Maryland, long prominent in the agriculture of this State, and a careful observer, in a note lately received says: "It would be vastly to the interest of our farmers if they would pay more attention to the smaller industries, among which I think one of the most important is the drying of fruits, both wild and cultivated, and vegetables." We are sure this is sound advice.

Crops in Montgomery County, Md.

A correspondent writes as follows:

"We have just finished our harvest; some wheat very fine, but all North hills sown is poor. The hay on our best farms will average from 500 to 2000 lbs. per acre; very few make over 1,000 lbs. The prospect for corn is unusually fine; but few oats sown and they are quite short on account of the severe drouth which has been upon us for nearly a year; many wells are dry, the streams unusually low.

We have just had a splendid rain—the best for two months."

Investigations in Agriculture.

From an address delivered by Prof. E. M. Pendleton at the University of Georgia, we extract the following:

"Take the masses of the farmers in this country, even the most enlightened of them, and how little do they know about the whys and wherefores of their own profession. How much valuable time and money is wasted because they know not how to save the immense amount of nitrogen evolved from their stables and their cotton-seed heaps. How much is lost in the purchase and application of substances which are often not worth the freight paid upon them? A hundred similar questions could be asked and answered in the same way in reference to the application of the most important principles of science applied to practical agriculture. The young men taught in institutions like this will know these principles and go out to teach them to others until the whole land is blessed with the light of science. But this work will necessarily be gradual. Thus while we have recently demonstrated on the farm by eleven different experiments, that a certain amount of ammonia and phosphoric acid applied in certain forms to cotton, paid an interest on investment, the first year of 292 per cent., the cotton being sold at 13 cents; and the residue the second year 656 per cent., and for both years, for every dollar laid out in the purchase of the chemicals, we realized \$9.48; and although this has been published and read by hundreds of intelligent farmers, how few will undertake to carry it into practice? We will have to look to another race of farmers, especially to that class educated in these halls, to make much progress in the scientific details of progressive farming. By way of making the thing more practical we proved to a demonstration that the man who would properly use and apply such a class of pure fertilizers, meeting with the same seasons and contingencies of culture that we did, could pay for the fertilizers and make cotton for the two years included in the experiments at five cents and eight mills per pound, while it would cost the man who would cultivate the same land with the same labor, without the fertilizers, twelve cents per pound. We might have doubted ourselves if there had been but one experiment; but there were eleven, and we have tried it two years and are now trying it the third. If some Yankee book vender was to come to Georgia and propose to sell a pamphlet for five dollars per copy that would tell them how to double their crops with the

same labor, the thing would be published in all the papers, and the whole country would be agog to try the experiment. Such a thing has actually occurred, and proved to be a humbug. But when a scientific demonstration is made at the experimental farm, people take hold of it very cautiously. I am glad they do. It will be apt to last all the longer. This remarkable result was mainly due to the effect of the residue of fertilizers left in the soil from the first year's application. The truth was demonstrated practically, which had before been announced by Liebig, that clay soils hold phosphoric acid tenaciously for all time, and will not release it, even when in an available form, only to the roots of plants. We left the beds as little disturbed as we could, so that the old roots and the residue might remain as much concentrated as possible. By this means the little fibres will decay and their nitrogen be converted into ammonia, which, with the phosphoric acid already in the bed, will present the very aliment needed by the plant.

It has been demonstrated in Germany very recently that 136 lbs. of nitrogen is left in the stubble and roots of lucerne, per acre, to the depth of 10½ inches; while red clover leaves 191 lbs. Wheat, which is a nitrogen destroying plant, yields 23½ lbs. I have no doubt that cotton will leave largely more than this, and intend to demonstrate the fact the present season by actual experiment. Thus you perceive on our worn soils the plan of undertaking to manure the whole land, as in Europe, will not pay in this country; that we must fertilize the plant, rather than the soil, as we can make more with a much less outlay of labor and of money than to adopt the stereotyped notions of the old country. But it has also been demonstrated that another element has been exhausted from our soils, which it is necessary also to furnish to them in some way before remunerative crops can be made. This is not a mineral element, however, but an organic element, and yet it must be furnished to the soil as it is only taken up by the roots of plants. We, of course, refer to nitrogen. This may be applied either in the form of ammonia, or organic nitrogen as it exists in cotton seed, animal dust, &c., in the form of albuminoids, or as nitric acid, in the form of the nitrates. We have clearly established by a number of undoubted experiments, that although the chemists put the nitrates forward as the most valuable, that it is the least so, and that a cotton planter can afford to give 50 cents a pound for nitrogen in the form of animal matter, rather than give thirty-five for it as nitrate of potash or nitrate of soda. The simple reason is, that in flower pots of sand, the nitrates being better prepared for food, act at once without having to undergo transformation, while in a soil the albuminoids have to undergo a rapid putrefactive decay, and in its decomposition it gives up heat and forms other chemical combinations, as carbonic acid and water, as well as ammonia; all of which act as solvents in a poor soil and help to make it richer. In a flower pot of sand it has no material to act upon as in the soil, and hence it cannot accomplish as much. * * * * But we have clearly proven the value of organic matter—humus, if you please—so that it cannot admit of a doubt in any

unprejudiced mind. Chemists contend that, because plants can be fully developed in chemical solutions without organic matter, it is of no benefit to crops in a soil. Not one of them, however, ever made another inference (quite as legitimate) that because plants could be grown in chemical solutions, in water, without soils, *ergo* soils were not necessary to produce crops.

We demonstrated last year that 1,048 pounds of cotton could be raised per acre by the application of 200 pounds of green weeds, applied in that condition to a row seventy yards long, while the ashes, containing all the chemicals (so-called) without the organic matter produced only 656 pounds, the natural soil 587 pounds. This was owing to the nitrogen of the weeds, made available by being converted into ammonia by rapid decomposition. We have also demonstrated in other field experiments, and in flower pots, as Professor Storer, of the Bussey Institute, has recently done, that humus absorbs and supplies to plants much of the nitrogen upon which they feed. * * * *

SALE OF LAND IN MARYLAND AND THE SOUTH TO FARMERS FROM THE EAST AND WEST.—There is undoubtedly a great change being effected in the immigration to this and the states South of us, during the past year. We have many evidences of this, the record of which would, if made, fill pages of our journal; but a remarkable case before us induces us to allude to it at this time—it is a list of sales made during the past 10 months by a real estate agency, established at Easton, Talbot, co., Md., by a Mr. J. F. Mancha, who has furnished a list of sales to 41 different parties, amounting to 5,138 acres, and realizing \$178,910, to purchasers nearly all of whom are from Pennsylvania and New York, although there are some from Ohio, Canada, New Jersey, Connecticut, Kansas, New Jersey and Montana Territory, and one or two from the Southwest. The farms range in size from 32 to 450 acres, and the prices from \$700 to \$33,000. The highest priced farm was sold to Simeon Brady, of New York, 200 acres, for \$33,000; another owned by Col. W. R. Hughlett, 450 acres, to Messrs. Naylor & Scheppers, of Philadelphia, for \$20,000.

In Virginia, an immigration society is just inaugurated, with the Governor and other distinguished men at its head, the object being to disseminate information of the advantages of that State for immigrants. Other Southern States are adopting similar measures; foremost among them, Tennessee, where, we learn, a considerable increase of population is being received. A stirring up upon the subject of improved agriculture is evident in that State, if we are to judge from the number of new clubs to the *American Farmer* we are lately receiving therefrom. A remark of the late Com. Maury is worthy of insertion here, as to the advantages of Tennessee for emigrants:

"No country in the world can surpass Tennessee, on account of the rare advantages of climate, in latitude, for abundance of yield, beauty of form or richness of flavor of fruits; the hills, knobs and mountains afford every variety of sub-climate and site that the most fastidious fruit-grower could demand or desire."

The Grain and Cotton Market.

Business Outlook.

During the month of July there have been considerable variations in the markets for the products of the earth, and commotion in the business affairs of the country, to which we will briefly allude, prefacing our remarks with the caution to our readers, that at certain seasons of the year; speculation in breadstuffs and cotton and other articles, the products of the labor of the farmer, is always rife. The arts adopted by the "bulls and bears" are numerous and cunningly devised, and all kinds of machinery are introduced to carry out their purposes, and, we regret to see too frequently the press, in the hands of unprincipled men, is made a powerful means of furthering schemes for the profit of those who pay best for such services.

The result of the WHEAT harvest just gathered has been variously estimated, and we may say, from the best light we have been able to obtain, it will not be near an average crop, notwithstanding many large yields have been obtained. In some localities the yield has been uncommonly fine, whilst in many others, from winter killing, the badly cultivated and poorly manured fields show but an indifferent yield in quantity, though generally good in quality. The OATSCROP at one time after sowing, in consequence of the drought, a very poor prospect was presented, the straw being very short; but the fine rains, which were general after the first of June, made a vast difference in the appearance of the crop, and a tolerably fair yield has been obtained, but by no means, we believe, can a full crop be counted on as having been harvested. The CORN crop, as we remarked last month, made a wonderful change after the drought ended, and wherever it had any thing like a fair chance, being gotten in in time, and on a soil that had any plant food in it to produce a crop, the yield bids fair to be very large, and is now free from any usual source of danger to it.

About the middle of the month, startling accounts were received from Europe, of the terrible storms and floods in England and on the continent, which caused a very rapid advance in the price of wheat on this side, extending to 25 to 80 cents per bushel above the rates of the beginning of the month. The feverish state of the market continued for a week or ten days, until the price was higher here than in Europe, operators supposing that prices would continue to advance there before shipments could reach them, but these calculations were found to be delusive, as the *Mark Lane Express*, the organ of the English grain, at the beginning of the last week of the month, announced that a great change had taken place in the weather, and that "if the weather should continue fine, the crops may not suffer much on the yield, whatever may be the result as to quality." It was added, however, that "a return to the former low rates seems to be impossible with stocks so near exhausted, but millers are not likely to

to purchase freely at the high rates while there is a possibility of an improved prospect."

This announcement caused prices to recede on this side, and the heavy rise at the middle of the month lost fully or more than a half of the advance up to the present writing, (29th July.)

The failure of the great banking-house of Duncan, Sherman & Co., of New York, about the same time, with liabilities to the extent of six million dollars, although mainly caused by a decline in cotton, yet had a bad effect on the general markets, and no doubt helped to effect somewhat the decline in wheat, as it no doubt did that of cotton.

The *N. Y. Shipping List* of the 28th says that, "although it is too early to ascertain, even approximately, to what extent the foreign harvests are likely to fall short of the usual average, enough is known to warrant the belief that the great bulk of the surplus of our own wheat and corn crops will be needed abroad, and at somewhat better average prices than were realized for last year's products."

The crops of Portugal, in Western Europe and in Southern Russia, the same paper says are affected by disasters, which will require an increase of supplies from this country. And the telegrams from the West of this country announce to-day that the heavy rain storms in Ohio and Indiana, the last few days, have done great damage to the crops of wheat.

A despatch from Urbana, Ohio, says, "the wheat crop is believed to be almost entirely lost in this country. The heavy rains of the past week have caused it either to rot or sprout. In Fayette county, owing to the recent rains, the crops are very materially injured, and as the wheat is all rotting in the fields, farmers look upon that crop as an entire failure."

Another despatch of 28th, from Terre Haute, Indiana, says: "One of the heaviest rain storms for years fell here yesterday and to-day. Travel on railroads is impeded or suspended, owing to the washing out of culverts and loss of bridges. The Wabash river is out of its banks, and has probably destroyed a million and a half bushels corn in the bottoms. Wheat buyers say the wheat crop is nearly ruined, that which is threshed being too wet to be salable."

Our readers will note these facts and govern themselves accordingly.

Merino Fleeces.

Gen. Jno. S. Goe, of Brownsville, Pa., sends us some samples of wool from his Spanish Merino Sheep, and gives us a report of the weight of the fleeces. The fleece of one ram weighed 32 lbs. 8 oz.; two rams each clipped 29 lbs., and one 27 lbs.; one ewe yielded 25 lbs. 14 oz., and others 22 lbs. 3 oz.; 21 lbs. 8 oz.; 21 lbs. 14 oz. and 20 lbs. 3 oz., and so on down.

Mr. L. C. McDougle, a neighbor of Mr. Goe, certifies that he was present at the shearing of these sheep, and saw the fleeces rolled and weighed, that they were of one year's growth and clean, fine and beautiful, containing but little grease. The samples sent us are certainly very beautiful.

State Fairs for 1875.

American Pomological, Chicago.....	Sept. 8, 10
California, Sacramento.....	Sept. 15, 25
Cincinnati Industrial.....	Sept. 5, Oct. 9
Colorado, Denver.....	Sept. 21, 25
Connecticut, Hartford.....	Oct. 5, 8
Georgia, Macon.....	Oct. 18, 23
Illinois, Ottawa.....	Sept. 13, 18
Iowa, Keokuk.....	Sept. 27, Oct. 1
Maine, Portland.....	Sept. 21, 24
Maryland Horticultural, Baltimore.....	Sept. 22, 24
Maryland, Pimlico, near Baltimore.....	Sept. 14, 17
Massachusetts Horticultural, Boston.....	Sept. 21, 24
Michigan, East Saginaw.....	Sept. 15, 17
Minnesota, St. Paul.....	Sept. 18, 17
Montana, Helena.....	Sept. 27, Oct. 2
Nebraska, Omaha.....	Sept. 21, 24
New England, Manchester, N. H.....	Sept. 7, 10
New Hampshire, Manchester.....	Sept. 7, 10
New Jersey, Waverly.....	Sept. 20, 24
New York, Elmira.....	Sept. 27, Oct. 1
Ohio, Columbus.....	Oct. 6, 10
Oregon, Salem.....	Sept. 11, 16
Pennsylvania, Lancaster.....	Sept. 27, 29
Rhode Island, Pawtucket, near Providence.....	Oct. 5, 7
St. Louis Association, St. Louis, Mo.....	Oct. 4, 9
Virginia, Richmond.....	Oct. 26, 30
West Virginia, Clarksburg.....	Sept. 7, 9
Wisconsin, Milwaukee.....	Sept. 6, 10

NEW ADVERTISEMENTS.

T. W. Levering & Sons.—Seed Wheat, Grass Seeds, &c.
G. S. Bellis.—Fruit Trees.
Thomas Mehan.—Fruit and Ornamental Trees.
Cromwell & Congdon.—Agricultural Implements, Trees, Plants and Seeds.
Griffith & Turner.—Keller's Drill and other Machines.
Joshua Thomas.—Sweeney's Fruit and Vegetable Drier.
L. H. McGinnis.—McGinnis' Harrow and Cultivator.
Rev. B. H. Phillips.—Virginia Female Institute.
Rev. J. C. Wheat.—Episcopal Female Institute.
W. W. Smith.—Bethel Academy for Boys.
Thos. J. Lea.—Pure Berkshire Swine.
Henry Carroll.—Shropshire Lambs.
W. W. Cobey.—Cotswold Sheep.
Mr. Dows.—Lincolnshire Lambs.
John S. Reese & Co.—Soluble Pacific Guano.
John S. Reese & Co.—Dissolved Bone Phosphate of Lime.
Piedmont Guano Co.—Standard Fertilizers for all crops.
Md. Fertilizing and Manufacturing Co.—Fertilizers.
B. M. Rhodes & Co.—Orchilla and Curacao Guano.
Jno. M. Rhodes & Co.—Rhodes' Standard Manures.
R. J. Baker & Co.—Pure Ground Bone, Chemicals, &c.
W. Whitecock & Co.—Vegetator.
W. Whitecock & Co.—Farmers' Supplies.
J. J. Turner & Co.—Reduction in price.
J. J. Turner & Co.—"Excelsior."
J. J. Turner & Co.—Ammoniated Super-phosphate.
R. W. L. Rasin & Co.—Soluble Sea Island Guano.
Andrew Coe.—Coe's Super-phosphate.
Griffith & Turner.—Victor Cane Mill, Trees, Plants, &c.
T. S. Hubbard.—Grape Vines.
Abram Jessop.—Cattle for sale.
P. Zell & Sons.—Zell's Super-phosphates.
L. C. Amnden.—Amnden Peach.
I. M. Parr & Son.—Fultz and other Seed Wheats.
S. Sands & Son.—Farmers' and Planters' Agency.

Baltimore Markets—July 29.

The quotations below are Wholesale Prices.

Breadstuffs.—Flour.—Market quiet and prices steady. Howard St. Super, \$1.35@5.00; do. Extra, \$5.25@5.75; do. Family, \$6.00@7.25; Ohio and Indiana Super, \$4.25@5.00; do. Extra, \$5.25@5.75; do. Family, \$6.00@7.25; City Mills Super, \$4.50@5.00; do. Extra, \$5.25@5.75; do. Rio brands do. \$7.50@7.75; City fancy brands, \$8.50; Fine Flour, \$4.00@4.25; Rye Flour, \$5.25@5.75; Corn Meal, City, \$1.50; Western, \$2.75.
Wheat.—Southern active and firm. Western nominal. We quote Penn. red, 123@135 cents; Maryland red fair to prime, 120@140 cents; do. amber prime to choice, 142@145 cents; do. white fair to prime, 125@140 cents; Western mixed amber, 133 cents; do. No. 3 red, 135 cts.
Corn.—Southern quiet, Western unsettled. Quotations are for Southern white, 91 cents; do. yellow, 85 cts.; Western mixed, 84 cents.
Oats.—In good demand, prices steady. Western bright, 63@66 cents; do. mixed, 61@62 cents; Penna., 65 cents; heavy new, 61@62 cents.

THE AMERICAN FARMER.

Rye.—Very quiet. Fair to good is quoted at 95¢@100 cents; prime 100¢@105 cents.

Cotton.—Market dull and prices nominal. The failure of the large banking house of Duncan, Sherman & Co., of New York, large holders of cotton, very much affects the market. It is said their losses on present holdings will be over \$1,000,000. No quotations are given, except say 14¢ cents nominal for middling.

Hay and Straw.—Cecil Co. (Md.) Timothy, baled, quiet at \$26@28; Maryland and Pennsylvania prime do. \$25@26; do. mixed \$22@25; do. clover \$20@22. Straw, wheat, \$19@20; Rye \$14; Oat \$11 7/8 ton.

Provisions.—Quiet and firm. Bulk Shoulders 9 1/2 cents; clear-rib Sides 12 1/2 cents; Bacon Shoulders 10 1/2 cents; clear-rib Sides 13 1/2 cents; Hams 14 1/2 @15 cents; Lard 15 cents; Mess Pork \$22.50. **Butter.**—Receipts light. New York State, extra fine, 24¢@26 cents; prime to choice 22¢@23 cents; Western Reserve, prime to extra, 22¢@25 cents. **Cheese.**—Steady and in fair demand. Western 11¢@12 cents; Eastern 13¢@14 cents. **Eggs.**—Dull at 17¢@18 cents.

Salt.—Liverpool Ground Alum \$1.15@1.25; Fine \$2.10 @2.15 7/8 sack. Turk's Island 35¢@40 cents 7/8 bus.

Seeds.—Timothy \$3.00@3.12 1/2 7/8 bus.; Clover 12 1/2 @13 cents 7/8 lb.; Orchard Grass \$3.50 7/8 bus.; Buckwheat \$1.50 7/8 bus.

Wool.—Tub-washed 47¢@51 cts.; unwashed 34¢@36 cts.

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BETHEL ACADEMY prepares for University or business. **\$87.50** for Board and Tuition for half session. Reopens Sept. 16th. For Catalogue address W. W. Smith, A. M., Bethel Academy, Fauquier county, Va.

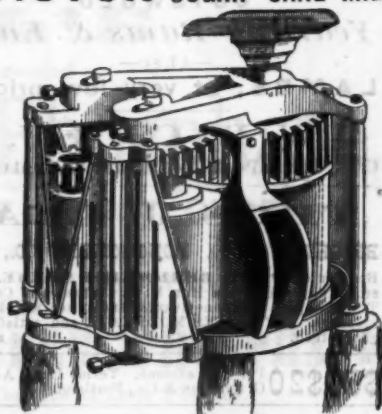
EXTRACTS FROM TESTIMONIALS.

"I most heartily commend Bethel Academy to the favor and patronage of the public—W. E. PETERS, Prof. Latin, Univ. of Va." "I would be willing to confide my own son to Mr. Smith's care, and hence I recommend the school to other parents.—F. H. SMITH, Prof. Nat. Phil., Univ. of Va." "I feel warranted [from experience] in recommending it.—JOHN B. MINOR, Prof. Law, Univ. of Va." "One of the best institutions of its class in the State.—H. H. HARRIS, Prof. Greek, Richmond College." "I know of no institution of like grade superior to it.—REV. J. D. BLACKWELL, A. M., D. D., Lynchburg, Va." "Unequaled, in my opinion, by any institution in the South.—GEN. C. W. FIELD, Atlanta, Ga." "Best and cheapest preparatory school in the State.—CHAS. MASON, King George county, Va., and COL. S. D. CRAWFORD, Augusta Co., Va." "The cheapest, and as good as the best in the U. S.—ADAM EMPIR, and J. A. ENGELHARD, Wilmington, N. C. It

The Amsden Peach again proves the earliest, largest and best. Red freestone. Buds safely by Mail or Express per 100, \$1; 1,000, \$8. Also, 1 and 2 year old trees. Circular free.

L. C. AMSDEN, Carthage, Mo.

VICTOR SUGAR-CANE MILLS



At Reduced Prices. Also, FRUIT and ORNAMENTAL TREES.

A Call is solicited.

GRIFFITH & TURNER,

41 and 43 N. Paca St., Baltimore.

CATTLE FOR SALE.

A DEVON COW, 6 years old, descended from Patterson stock, with a HEIFER CALF, a month old, by full-bred Jersey Bull; both sire and dam of excellent milking stock—price \$65. A JERSEY BULL, 18 months old, excellent stock—but not in herd-book; \$40.00. THREE HEIFER CALVES and ONE BULL, each 3 to 5 months old—two of the Heifers Jersey, and the other a cross of an excellent Milker, by a Jersey Bull; the Bull is a Jersey. Price for the lot \$100, or \$27.50 separately.

Apply to the EDITORS of *The American Farmer*, or to

ABRAM JESSOP,

au-3t Ashland P. O., Baltimore Co., Md.

LINCOLNSHIRE LAMBS FOR SALE.

Mr. Dows will offer 25 of his LINCOLNSHIRE LONG-WOOL RAM LAMBS at PUBLIC SALE, in PORT TOBACCO, Charles county, on TUESDAY, AUGUST 10th, 1873. Sale to commence at 2 o'clock, P. M. ROSEMARY LAWS, July 20, 1873. 31*

FOR SALE.

SEVERAL FULL BRED SHROPSHIRE BUCK AND EWE LAMBS. PRICE \$17 EACH, INCLUDING BOX.

Henry Carroll,

3t Phoenix P. O., Balto. Co., Md.

COTSWOLD SHEEP.

I offer the public this season a superior lot of

COTSWOLD

Yearling Rams & Ewes,

—ALSO—

LAMBS, at very low prices.

W. W. COBEY,

Cross Roads Post Office, Charles County, Md.

THOS. J. LEA,

BRIGHTON P. O., MONTGOMERY CO., MD.

Breeder of **PURE BERNSHIRE SWINE**, from stock imported by the Hon. M. H. Cochrane, of Canada, T. B. Cooper, of Pennsylvania, and other well-known breeders. PRICES MODERATE and satisfaction guaranteed. au-3t

\$5 to \$20 Per Day at home. Terms free. Address G. STINSON & Co., Portland, Me. [fe-ly]

GRAPE VINES.

LARGEST STOCK IN AMERICA; quality extra. Prices reasonable. Price List free.

au-3t T. S. HUBBARD, Fredonia, N. Y.

For FALL PLANTING.

Fruit and Ornamental Trees.

THE GERMANTOWN NURSERIES, near PHIL'A,

THOMAS MEEHAN, Prop'r.

Now twenty years established, have a world-wide reputation for the great variety and superior quality of the stock grown. Those who wish to purchase in very large quantities, or to sell again, will find the prices favorable; while those who wish only for small quantities, will find the inducements as favorable as from any firm. The many direct lines of railroad and water transportation centering in Philadelphia enables customers a thousand miles away to get the trees at no greater cost than they would have to pay for hauling them twenty miles from their own doors.

For this fall, attention is particularly called to our *Apple and Cherry Trees, Norway Maples, Sugar Maples and Poplars, Norway Spruces, Hemlock Spruce and Siberian and American Arbor Vites*. Our **OSAGE ORANGE HEDGE PLANTS** also, have never been finer than this season. The prices are according to quantity and size, and will be furnished with pleasure to all inquirers. Catalogues free. au-3t

BUTTERWOOD NURSERY & FRUIT FARM,

Littleton, Halifax County, N. C.

Having grown a fine Nursery, consisting of all the different varieties of the very best kinds of Fruit, I am prepared to furnish any quantity and quality of choice Fruit Trees from one to two years' growth. I have **PEACH, PEAR and APPLE TREES**, besides other kinds of **FRUIT TREES**. **BERRIES** of the earliest variety and choicest selection. Peaches that ripen from the 10th of June till the 18th of October.

TO LOVERS OF FRUIT!

These Trees will be sold at greatly reduced prices. Send and get my Catalogue and Price-List.

au-3t G. S. BELLIS, Littleton, N. C.

The McGinnis Harrow and Cultivator.

These Implements are so constructed that the teeth of the harrow or the shovels of the Cultivator are instantly adjusted to an upright position, or to a backward or forward slant, to any degree, and the teeth in harrows reversible—rear edges to the front—without removal from the beams. They are also made portable on wheels, which do not interfere in work. I am having them manufactured by Messrs. Danner & Newman, of Woodstock, Va., and will furnish them on ten days' notice; warranted as represented in the circulars.

PRICES—depending on size of frame and the shape of teeth, from \$15 to \$25; \$5 to \$8 additional for transporting wheels attachments. Write for Circular to Messrs. DANNER & NEWMAN, Manufacturers; or to

L. H. MCGINNIS, Inventor,

au-1f Woodstock, Va.

The Farmers' Fruit & Vegetable Drier,

(SWENY'S PATENT.)

Simple in Construction—Cheap and Efficient.

FOR SALE BY **JOSHUA THOMAS,**

53 Light St., Baltimore.

Circulars free. State, County and Farm Rights for sale. au-1f

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STAUNTON, VA.

REV. R. H. PHILLIPS, A. M., PRINCIPAL.
Miss E. FLORENCE PHILLIPS, } In charge of the family.
Miss ANRIE S. PARRAN, }
The 31st Annual Session will commence Sept. 1, 1875.
The Principal will be assisted by a full corps of officers
suitable for a first-class school. Terms reduced to
Cash basis and very moderate.
For Catalogue, address the Principal. 1t

EPISCOPAL FEMALE INSTITUTE.
WINCHESTER, VA.

Rev. J. C. WHEAT, A. M., Principal,
(Formerly of Staunton, Va.)
For Circulars, stating Terms, &c., address J. C.
Wheat, Winchester, Va.
REFERENCES—The Bishops and Clergy of the Pro-
testant Episcopal Church of Virginia. 1t

McGinnis Improved Lime-Spreader.

Warranted to spread evenly any desired quantity per acre of fine and reasonably dry fertilizer. It is an improvement on the Thornburg & McGinnis Spreader, retaining the oscillating and patented features of that, and greatly improved in simplicity, and perfectly adapted to regulate the sowing of any desired quantity, and to prevent the clogging of damp material.

PRICE REDUCED TO \$110.

Write for Circular to

DANNER & NEWMAN,
WOODSTOCK, VA.

Sole Manufacturers for the United States. my

I. M. PARR & SON,
Grain Commission Merchants
BOWLY'S WHARF, BALTIMORE.

Keep constantly on hand choice selections of PENNSYLVANIA FULTZ and other varieties of SEED WHEAT. The success of the former this year indicates an increased demand for seed, and we trust our friends will send their orders early, so as to secure the best selections. aug

NOTICE TO WHEAT GROWERS.

REDUCTION OF PRICE OF

ZELL'S

—Celebrated Ammoniated—

Bone Super-Phosphate,

UNRIVALLED FOR THE WHEAT CROP.

For Sale by Agents and Dealers throughout the Country.

Price \$45 per Ton at Baltimore.

DISSOLVED BONE SUPER-PHOSPHATE

Supplied to Manufacturers and Dealers at Low Figures.

We are prepared to furnish Granges with an Ammoniated Bone Super-Phosphate, of a standard quality, adapted to Grain crops, at very lowest price.

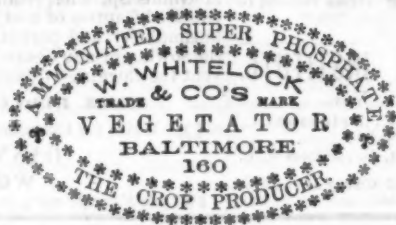
P. ZELL & SONS, Manufacturers,

No. 30 South Street, Baltimore.

THE AMERICAN FARMER.

Whitelock's Vegetator.

\$4.00
PER BAG.




\$50.00
PER TON.

Unsurpassed in Value.

Sure to Produce a Crop.

No Reduction in Quality.

No Common Material Used.

 We ask Farmers to test its value by the side of any Manure they may apply.

W. WHITELOCK & CO.

au No. 44 South Street, Baltimore.

To Cranges and Farmers' Clubs.

DISSOLVED

BONE PHOSPHATE OF LIME, **WITH** **SALTS OF POTASH,**

A Raw Material for Home Manufacture of Fertilizers.

This Article is finely ground BONE PHOSPHATE OF LIME, thoroughly dissolved with Acid and contains in addition 10 per cent. of the

Salts of Potash, Soda and Magnesia.

It is sold under **Guaranteed Analysis**, in bags, or in bulk, if preferred, at a difference in price of the cost of bags.

A printed Analysis, showing the per cent. of Dissolved Phosphate, will be furnished to all purchasers.

JOHN S. REESE & CO.

No. 10 South Street, Baltimore.

TO WHEAT GROWERS.

“Excelsior,”

—1875.—

Composed of 800 pounds of No. 1 Peruvian Guano, and 1,200 pounds of Soluble Phosphate of Lime, (Bones dissolved in Sulphuric Acid) Potash and Soda.



Forming the most concentrated, universal and durable Fertilizer ever offered to the farmer—combining all the stimulating qualities of Peruvian Guano, and the ever durable fertilizing properties of Bones, in fine dry powder, prepared expressly for drilling, and can be applied in any quantity, however small, per acre. It is the opinion of many close-calculating Farmers, after SEVENTEEN YEARS experience in testing it side by side with other popular fertilizers, that an application of 100 pounds of “Excelsior” is equal to 200 pounds of any other fertilizer or guano, and therefore fully 100 per cent. cheaper.

UNIFORMITY OF QUALITY GUARANTEED BY THE MANUFACTURERS.

Farmers should see that every bag is branded as above, with the ANALYSIS and OUR NAME in RED LETTERS. All others are Counterfeits.

PRICE \$50 PER TON.

J. J. TURNER & CO., 42 Pratt St., Baltimore.

TO WHEAT GROWERS.

THE CONTINUED SUCCESS OF THE

Soluble Sea Island Guano,

As a WHEAT MANURE, is sufficient guarantee to the Planter of its uniform quality and value, to say nothing of the unfailing constituents derived from the

—BONE AND MEAT—

Of the SLAUGHTERED CATTLE, from our EXTENSIVE FACTORIES IN THE STATE OF TEXAS, the Moisture and Grease alone having been extracted, leaving all the valuable Fertilizing Elements, which are then treated with Sulphuric Acid at our Baltimore Works, and, with the addition of Potash Salts form the

SOLUBLE SEA ISLAND GUANO.

FOR SALE IN LOTS TO SUIT.

R. W. L. RASIN & CO.

Cor. South and Water Streets, Baltimore.

— FOR —
Wheat and other Grain.
SOLUBLE PACIFIC GUANO
IS UNSURPASSED,

As ten years' experience by the Leading Farmers and
Planters in the Country abundantly verifies.

JOHN S. REESE & CO.

General Agents,

BALTIMORE, MD.

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TIMOTHY SEED, SEED-WHEAT, CLOVER, &c.

T. W. LEVERINC & SONS,
Commission Merchants and Dealers in Field Seeds,
55 COMMERCE STREET, BALTIMORE, MD.

Keep on hand the best varieties of SEED-WHEAT; also, CLOVER, TIMOTHY
and ORCHARD GRASS SEEDS, &c.

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T. W. LEVERING & SONS.

Fertilizers, Seeds and Grain.

ROB'T TURNER & SON
Have on Hand all kinds of FERTILIZERS of known value.

WE NAME IN PART:

Peruvian Guano, Maryland Fertilizing Super-Phosphate,
Blood Fertilizer, Bone Dust.

CLOVER, TIMOTHY AND OTHER SEEDS.

"CLIMAX POWDRETT" a permanent Improver of the Soil—manufactured under our superintend-
ence and inspection.

may-17

43 and 46 S. Frederick street, BALTIMORE.

TO FARMERS.

J. J. TURNER & CO.'S AMMONIATED BONE SUPER-PHOSPHATE.

ANALYSIS.

Ammonia	3.54
Soluble Phosphate of Lime	18.93
Bone Phosphate of Lime	3.72
Potash	4.07

Composed of the most concentrated materials, it is richer in Ammonia and Soluble Phosphates than any other Fertilizer sold, except our "EXCELSIOR," its only competitor, and is made with the same care and supervision; uniform quality guaranteed; in excellent order for Drilling. Packed in bags.

PRICE \$45 PER TON.

J. J. TURNER & CO.
No. 42 Pratt Street, Baltimore.

COE'S Ammoniated Bone Phosphate.

ESTABLISHED IN 1845.

And has sustained its High Reputation for Thirty Years.

LETTER FROM COMMODORE CHARLES LOWNDES.

EASTON, TALBOT Co., Md., July 16, 1875.

ANDREW COE, Esq., Baltimore, Md.

Dear Sir—I applied your Phosphate to Wheat, at the rate of 200 pounds to the acre. The result proved satisfactory. I deem it a good Fertilizer.

Respectfully,

CHARLES LOWNDES.

LETTER FROM THE PURCHASING AGENT OF THE AUGUSTA CO. (VA.) GRANGE

STAUNTON, AUGUSTA Co., Va., July 17, 1875.

ANDREW COE, Esq., Baltimore, Md.

I have used your Phosphate for the last five years, and it has never failed me; for one or two years I tried other standard fertilizers, but yours always excelled. Yours, I am sure, is better adapted to my land, and it has always been kept up to the standard. I shall use it again.

W. H. PEYTON.

ANDREW COE,
Office, 172 W. Pratt Street, Baltimore.

To the Farmers of Maryland and Virginia.

REDUCTION
IN THE PRICE OF
"EXCELSIOR."

In consequence of the change made by the Agents of the Peruvian Government, in selling their Guano FOR CURRENCY, INSTEAD OF FOR GOLD, and having made large purchases, and availed ourselves of the highest rate of discount allowed,

We are enabled to Reduce the Price of "EXCELSIOR" to \$50 per ton, Cash, At our Works. In making our purchases we had the advantage of selecting from the driest and richest cargoes of Guano in the United States, and we assure our patrons that the high standard of "EXCELSIOR," as heretofore, will be maintained, and the personal attention of one of our Firm to the entire manufacture in every detail continued.

J. J. TURNER & CO.

BALTIMORE, August 1, 1875.

No. 42 Pratt Street.

THE BEST.

**KELLER'S
PATENT.**



**GRAIN, SEED
and
FERTILIZING
DRILL.**

The best and most perfect Force Feed Drill. It took the highest Premium at the Maryland State Fair, at Pinlicko, October, 1874.

Hickok's Portable Cider Mill and Presses, Hutchinson's Cider and Wine Mills and Presses, Empire Threshers and Cleaners, Champion Rye Thresher, Railway and Sweep Horse-Powers, Maryland Straw and Fodder Cutters, For Horse or Hand Power, Stoner's Patent Wheat Fan, Guaranteed equal to any in the market, Cucumber Wood Pumps, Pioneer Stump Pullers, McGinnis' Lime Spreader, Steel and Cast-Iron Plows and Plow Castings, Garden and Field Seeds of all kinds, Fertilizers of different kinds, viz: GUANO, GROUND BONE, TURNER'S EXCELSIOR, &c., &c. Machinery built and repaired.

GRIFFITH & TURNER,

41 and 43 N. Paca Street, Baltimore.

IMPORTANT TO FARMERS.

The Maryland Fertilizing and Manufacturing Company

ARE NOW PREPARED TO FURNISH FARMERS WITH

FERTILIZERS,

Of the Highest Possible Grade, for the Wheat Crop. Price \$50 per Ton.

Farmers are invited to visit their Works on Warner street, and learn how first-class Fertilizers are made.

J. EDWIN MYERS, Gen'l Agent.
H. C. HOWARD, Secretary.

LAWRENCE SANGSTON,
President.

au-2t OFFICE, 4 S. HOLLIDAY ST.

PIEDMONT GUANO CO.'S

Standard Fertilizers,

FOR ALL CROPS.

R. J. BAKER, Pres't.

WM. B. GRAVES, Vice-Pres't.

C. E. BAKER, Treas.

J. G. MILLER, Supt.

Address, **W. JUDSON BROWN, Sec'y, 24 Commerce St., Baltimore.**

au-3t

CHARLES WAITE, Sec'y, Culpeper, Va.

CROP SUPPLIES.

W. WHITELOCK & CO.

ESTABLISHED } 44 SOUTH STREET, { CROPS
1845. } **BALTIMORE.** { 1875.

Will fill Orders for the following, which they guarantee perfectly pure:

**Dissolved Bones, Peruvian Guano,
Powdered Bones,
Potash Salts, Sulphuric Acid,
Ground Bones,**

AS THEY REQUIRE HEAVY SUPPLIES OF THESE ARTICLES
TO MANUFACTURE

WHITELOCK'S VEGETATOR

They are able to furnish the Farmer his Supplies at
VERY REDUCED RATES.

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CROMWELL & CONCDON,

Manufacturers and Dealers in every description of


Agricultural Implements AND MACHINERY,

Including in Part, Threshing Machines, Horse Powers,
Bookwalter's Portable Engines for Farm Use,
3 and 4½ Horse Power. Price \$250 and \$300.

**REAPING AND MOWING MACHINES,
GRAIN AND SEED DRILLS,
STRAW & FODDER CUTTERS,**


Including **SILVER & DEMING'S**, the best and most durable in the market.

Horse Hay Rakes,

 **COLEMAN'S FARM AND EXPRESS WAGONS,**

A large and complete assortment of **PLOWS, HARROWS, CULTIVATORS, &c.**, besides a well-selected stock of **HORTICULTURAL IMPLEMENTS**, all at the lowest prices. In our

SEED DEPARTMENT,

To which we give our special attention, growing and importing our own Seed, we are prepared to fill orders in large or small quantities for **VEGETABLE, FLOWER, HERB and GRASS SEEDS and SEED GRAIN**. As we thoroughly test the different varieties, both as to their quality and freshness before sending out, we are able to guarantee that there will be no disappointment to those who favor us with their orders.  Orders by mail promptly attended to.

BEING PROPRIETORS OF THE

PATAPSCO NURSERIES,

SITUATED ONE MILE SOUTH OF BALTIMORE,

We are prepared to supply

Fruit & Ornamental Trees, Evergreens, Vines, Shrubby,
ROSES AND BEDDING PLANTS, &c.


In quantities to suit. Our stock of

PEACH, APPLE, PEAR, PLUM and CHERRY TREES, for Fall and Spring Planting,

Is large and fine, embracing all the varieties, both new and old, which have proved themselves valuable. Address

CROMWELL & CONCDON,

No. 51 Light Street, Baltimore.

 Implement, Seed and Nursery Catalogues sent free on application. au y

HULL, MATTHEWS & CO.

Produce Commission Merchants

FOR SALE OF

Butter, Eggs and Produce Generally

And Dealers in FLOUR, GRAIN, FEED and SEEDS.

Special attention given to Green Fruits in season. Consignments Solicited.

AGENTS FOR

Thompson & Edwards' Fertilizers,

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100 S. CHARLES ST., BALTIMORE, MD.

S. COTTINGHAM, Jr.

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S. COTTINGHAM, Jr. & CO.

DEALERS IN

AGRICULTURAL IMPLEMENTS

Machinery, Horticultural Tools,



THE WINNER IMPROVED

Self-Discharging Horse Hay Rake.

GARDEN AND FIELD SEEDS,

WARRANTED FRESH AND GENUINE,
of the latest and best varieties, having
no old stock on hand.

GUANO & FERTILIZERS

Of the leading varieties,

Horner's, Turner's and others.

We respectfully call the attention of FARMERS, GARDENERS and PLANTERS to our NEW and complete stock of IMPLEMENTS, SEEDS, &c., viz: The **Geislers Improved Thresher and Cleaner**, Reapers and Mowers, Horse Powers, improved, Patent Screw Propellers and Masticators for cutting Hay, Straw and Fodder, Virginia Corn Shellers, Double and Single-Spout Corn Shellers, Cider and Wine Presses, Bickford & Huffman Grain Drill, Buck-eye Sulky Cultivator. The Southern iron-brace Grain Cradle, Wheat Fans, Improved Corn Planters, Lawn Mowers, Plows, Harrows, Cultivators, and all kinds of Farming Implements, &c.

Address,

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No. 38 N. Paca Street, Baltimore. Md.

B. T. HYNSON & SONS,

Paper Hangings and Window Shades,

WINDOW AWNINGS, MOSQUITO AND FLY NETS,

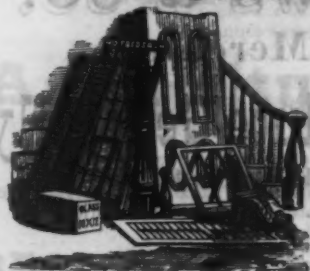
WALL PAPERS AND WINDOW SHADES of all grades and styles. Workmen sent to all parts of the country. Just received, a choice assortment of different styles. VENETIAN BLINDS made and repaired.

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No. 54 N. Howard Street, Baltimore, Md.

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JOHN W. WILSON & SON, Lumber Dealers,



AND MANUFACTURERS OF
*Frames, Sash, Doors, Blinds, Mouldings,
Brackets, Newels, Balusters,*
And Building Materials Generally.

Office, Wareroom and Lumber Yard, Fremont St., near S. Eutaw,
Factory, cor. S. Eutaw and Cross Sts.

BALTIMORE, MD.

BUY DIRECT OF THE MANUFACTURERS AND SAVE 25 PER CENT.

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BAUGH'S STANDARD MANURES.

 Baugh's High-Grade Manure for Tobacco and Grain.

(SEE ANALYSIS.)

BAUGH'S

TRADE MARK

RAW BONE



SUPER-PHOSPHATE.

The old-established article sold under guaranteed analysis.

GROUND BONES AND PURE BONE MEAL,
PERUVIAN GUANO, Oil of Vitriol, Land Plaster and all Fertilizing
Chemicals on hand and sold at lowest market rates.

ESTRELLA TRUE BIRD GUANO, A. A.

Analysing 50.894 per cent. Bone Phosphate of Lime.

PRICE IN BAGS of 200 lbs. each, \$30 per 2,000 lbs.

BAUGH & SONS, Manufacturers and Importers,

20 DELAWARE AVE., PHILADELPHIA.

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103 SOUTH STREET, BALTIMORE.


JOHN C. HACHTEL & CO.

MANUFACTURERS OF

HACHTEL'S AMMONIATED SUPER-PHOSPHATE,
PURE DISSOLVED BONE, and TOBACCO FERTILIZER.

ORCHILLA GUANO, AA—rich in Bone Phosphate and Alkaline Salts..\$30

MEXICAN GUANO, AA.....\$30

 **BONE MEAL, BONE DUST, AND GENUINE LEOPOLD SHALL KAINIT.**

JOHN C. HACHTEL & CO.

14 Bowly's Wharf, Baltimore, Md.

FARMERS AND DEALERS

Pure Fine Ground Bone,

PURE BONE FLOUR,

Pure Dissolved Bone Ash,

Pure Dissolved Raw Bone,

66 Degrees Oil Vitriol,

German Potash Salts.

PURE CHEMICALS for MAKING SUPER-PHOSPHATE,

AT THE LOWEST MARKET PRICE. Call at

R. J. BAKER & CO.'S,

36 and 38 South Charles Street.

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RHODES'
Standard Manures.

PREPARED FOR ALL CROPS.

Jno. M. Rhodes & Co.,

80 SOUTH STREET, BALTIMORE.

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B. M. RHODES & CO.

IMPORTERS OF

Orchilla and Curacao Guano, AA.

SOLUBLE AMMONIATED SOUTH SEA GUANO.

82 SOUTH STREET,

BALTIMORE.

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With an experience of nearly forty years in supplying the wants of farmers all through the Middle and Southern States, we again call attention to our facilities for supplying

ALL KINDS OF FERTILIZERS

now offered in this market. No other point in the country offers greater facilities for the manufacture, purchase and shipment of supplies of this kind. We can furnish at the manufacturers' prices all the various

SUPER-PHOSPHATES

made in this city. We will buy and ship, on order,

PERUVIAN CUANO,

delivering the same in any quantity above one ton, direct from the Agent's Warehouses, and always under guarantee of its freedom from adulteration. Also,

PHOSPHATIC GUANOS,

SOUTH CAROLINA PHOSPHATE,

KAINIT AND MURIATE OF POTASH.

BONE DUST

OF ALL KINDS and FINENESSES; BALTIMORE MADE, EASTERN, WESTERN and TEXAN.

OIL OF VITRIOL AND CHEMICALS

for making fertilizers at home.

Land Plaster, Agricultural Salt and Lime.

Especial attention is directed to our facilities for having manufactured to suit specific purposes,

SPECIAL FERTILIZERS

in lots of from 20 tons and upward, with guaranteed percentages of ammonia, soluble phosphate and potash, as desired, and at prices proportionate to their constitution as per analysis.

Farmers desiring small quantities, and clubs, granges and societies, proposing to co-operate in the purchase of large lots, are advised to correspond with us, naming their wants, when we will report terms, prices and constituents of such Fertilizers as they may desire.

Farmers and Planters ordering any specified make of Fertilizers will have their orders filled promptly, and where discretion is given us to select, we will so act as to insure satisfaction in our purchases.

The reputation of our establishment through a long series of years of a business in this line, is an assurance of our ability and disposition to faithfully serve our friends and customers.

Terms Cash, or Its Equivalent.

SAM'L SANDS & SON,

Publishers American Farmer,

9 NORTH STREET, BALTIMORE, MD.

BUCKEYE MOWER AND REAPER, SWEEPSTAKES THRESHER AND CLEANER.

The Truth is mighty and will prevail!

**28,000 Buckeye Mowers and Reapers,
And 1,500 Sweepstakes Threshers**

Sold in the United States alone during the season of 1874.

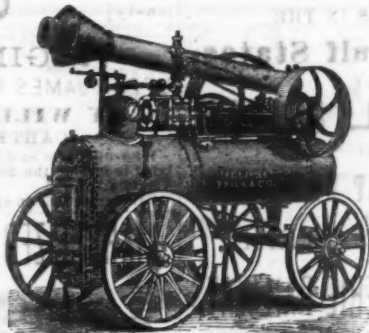
Farmers, do you want any more emphatic endorsement than this of the superior merits of these machines? Do not allow yourselves to be humbugged by the extravagant representations of agents for other machines.

The BUCKEYE and the SWEEPSTAKES are the STANDARDS, and when you buy either or both of them you are sure to get your money's worth, and to have machines that will last you, with proper care, 15 years and probably longer.

The BUCKEYE MILLER TABLE RAKE REAPER carried off the highest honors at almost every field-trial of 1874, and it has been plainly demonstrated that it is the simplest, best and easiest Reaper to bind after in the market.

Several valuable improvements have been added to the BUCKEYE and SWEEPSTAKES since last harvest, and manufacturers are determined to spare no pains or expense to keep them ahead of all competitors, which position they have occupied ever since their first introduction.

**ECLIPSE
Agricultural
ENGINE.**



**Best, Cheapest,
and most
Economical Engine
in the Market.**

Awarded first Premium at Cincinnati Exposition, 1874; Maryland State Agricultural Society, 1874, and Silver Medal at Virginia State Agricultural Society, 1874.

Thoroughly warranted in every respect, and especially adapted to wants of Threshermen, Sawing Lumber, Farm Work, &c.

**Circular Saw Mills, Hagerstown Wheel Horse Rake,
Perry's New York Hay Fedder, Lockwood Steel Hoes,
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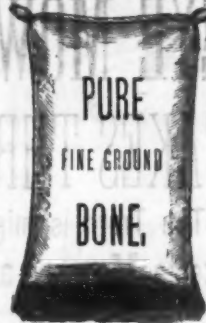
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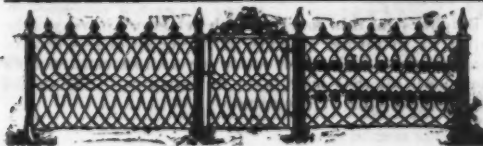
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